

ABBREVIATIONS

A.B.	Anchor Bolt	F.B.C.	Florida Bldg. Code	Opn'g.	Opening
Abv.	Above	Fin. Flr.	Finished Floor	Opt.	Optional
A/C	Air-Conditioner	F.G.	Fixed Glass	Pc.	Pedestal
Adj.	Adjustable	Flr.	Floor	P.L.	Parallam
A.F.F.	Above Finished Floor	Fdn.	Foundation	P.L.F.	Pounds per linear foot
A.H.U.	Air Handler Unit	Flr. Sys.	Floor System	Pt. Ht.	Plate Height
ALT.	Alternate	F.Pl.	Fireplace	Pt. Sh.	Plant Shelf
B.C.	Base Cabinet	Fl.	Foot / Feet	PSF	Pounds per square foot
B.F.	Bifold Door	Flg.	Footing	P.T.	Pressure Treated
Bk Sh	Book Shelf	Galv.	Galvanized	Pwd.	Powder Room
Bm	Beam	G.C.	General Contractor	Rad.	Radius
BOT.	Bottom	G.F.I.	Ground Fault Interrupter	Ref.	Refrigerator
B.P.	Bypass door	G.T.	Girder Truss	Req'd.	Required
Brg.	Bearing	Hdr.	Header	Rm.	Room
Cr.	Circle	Hgt.	Height	Rnd.	Round
Cls.	Ceiling	HB	Hose Bibb	R. & S.	Rod and S/W
Col.	Column	Int.	Interior	Sd.	Square Ft.
Comp.	A/C Compressor	K/Wall	Kneewall	Sht.	Shelves
C.T.	Ceramic Tile	K.S.	Knee Sp.	S.L.	Side Lights
D	Dryer	Lau.	Laundry	S.P.F.	Spice Pinch
Dec.	Decorative	Lav.	Laundry	Sq.	Square
Det.	Dedicated	L.F.	Laundry	S.Y.P.	Southern Yellow Pine
Dbt.	Diameter	L.T.	Laundry Tub	Temp.	Temper
Dis.	Disposal	M.C.	Masonry	Thick.	Thicken
Dist.	Distance	M.D.P.	Master Distribution Panel	T.O.B.	Top of Block
D.S.	Dryer Stack	Mfg.	Manufacturer	T.O.M.	Top of Masonry
D.V.	Dishwasher	Micro.	Microwave	T.O.P.	Top of Plate
Ea.	Each	M.L.	Microfilm	Trans.	Transom Window
E.W.	Each Way	Min.	Minimum	Typ.	Typical
Elc.	Electrical	M.L.	Microfilm	UCL	Under Cabinet Lighting
Elev.	Elevation	Mir.	Mirror	U.N.O.	Unless Not Otherwise
Ext.	Exterior	Mon.	Monolithic	VB	Vertically
Exp.	Expansion	N.T.S.	Not to Scale	V.L.	Vertical

SYMBOLS LEGEND

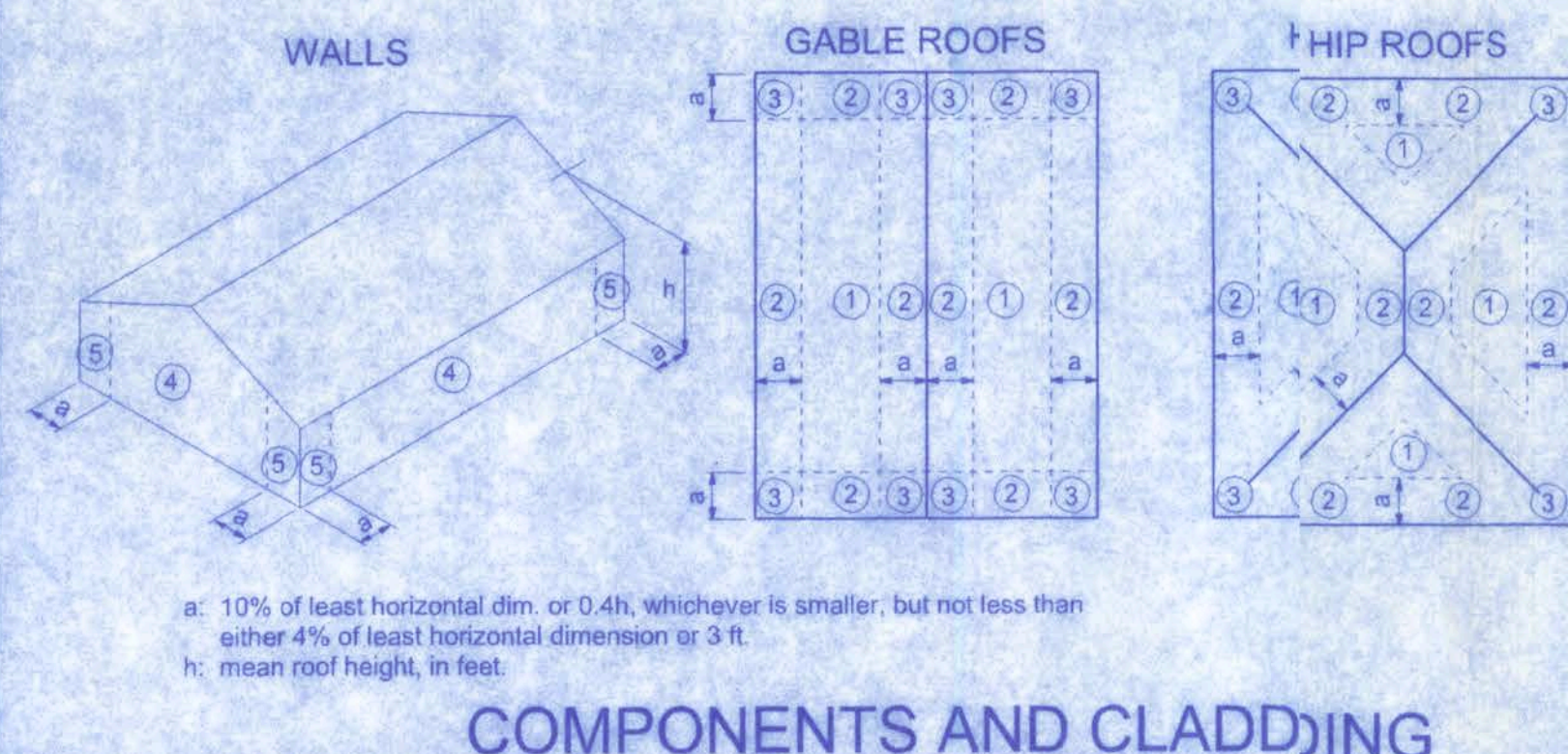
	section number sheet number	SECTION MARK
	detail number sheet number	DETAIL MARK
	elevation number sheet number	INTERIOR ELEVATION MK
	room number door identification	DOOR MARK
	room number	ROOM NUMBER



STRUCTURAL DESIGN CRITERIA

CODES:	FLORIDA BUILDING CODE - 2007 EDITION BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-05) SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS (ACI 301-05) BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-05) NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, 2001 EDITION APA PLYWOOD DESIGN SPECIFICATION	
LIVE LOADS:	ROOF OFFICE FLOOR 1ST FLOOR CORRIDOR	20 PSF (REDUCIBLE) 50 PSF 80 PSF
CONCRETE STRENGTH @ 28 DAYS	ALL CONCRETE UNLESS OTHERWISE INDICATED PEA GRAVEL CONCRETE FOR MASONRY CELLS ONLY (DO NOT USE FOR CONCRETE COLUMNS OR TIE BEAMS)	2500 PSI 3900 PSI
REINFORCING:	WELDED WIRE FABRIC SHALL CONFORM TO ALL REINFORCING BARS ALL STIRRUPS AND TIES	ASTM A185 ASTM A615-40 40,000 PSI ASTM A615-40 40,000 PSI
CONCRETE MASONRY UNITS:	ASTM C90-99B, STANDARD WEIGHT UNITS, f _m =1500 PSI MORTAR TYPE "S" 1800 PSI CONCRETE GROUT 3000 PSI CONTINUOUS MASONRY INSPECTION IS REQUIRED DURING CONSTRUCTION	
STRUCTURAL STEEL:	ALL STRUCTURAL AND MISCELLANEOUS STEEL A36 36,000 PSI, U.N.O. SHOP AND FIELD WELDS: E70XX ELECTRODES ALL BOLTS CAST IN CONCRETE: ASTM A36 OR ASTM A307	
WOOD FRAMING:	BEAMS, RAFTERS, JOIST, PLATES, ETC. U.N.O. NO. 2 SOUTHERN YELLOW PINE (19% M.C.) ROOF DECK: PLYWOOD C-C/C-D, EXTERIOR, OR OSB FLOOR SHEATHING: T&G A-C GROUP 1, APA RATED (48/24) WALL SHEATHING: PLYWOOD C-C/C-D, EXTERIOR OR OSB VERSA LAM BEAM Fb = 2900 PSI (2.0E) WOOD COLS. PARALLAM 2.0E U.N.O.	
WOOD ROOF TRUSSES:	DESIGN LOADS: TOP CHORD LIVE AND DEAD LOAD: BOTTOM CHORD DEAD LOAD: TOTAL: AWINGS:	30 PSF 10 PSF 40 PSF 5 PSF
WOOD FLOOR TRUSSES:	DESIGN LOADS: DEAD LOAD: LIVE LOAD: TOTAL:	25 PSF 100 PSF 125 PSF
SOIL BEARING VALUE:	ASSUMED ALLOWABLE SOIL BEARING PRESSURE AFTER COMPACTION: 1500 lb/psf SEE SOILS REPORT AND SPECIFICATIONS FOR COMPACTION REQUIREMENTS IF SOIL CONDITIONS IN THE PROJECT DO NOT MEET OR EXCEED THE CAPACITY, THE GENERAL CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO FOUNDATION POUR FOR VERIFICATION OF FOUNDATION DESIGN.	

ALL WIND LOADS ARE IN ACCORDANCE WITH SECTION 1609, FLORIDA BUILDING CODE, 2007		
BASIC WIND SPEED	110 MPH	
IMPORTANCE FACTOR	1.15	
BUILDING CATEGORY	IV	
EXPOSURE	B	
INTERNAL PRESSURE COEFFICIENT	+/- 0.18	
TYPE OF STRUCTURE	ENCLOSED	
MWFRS PER ASCE 7 DESIGN WIND PRESSURES WORST CASE	Zone 1 - Windward Wall Zone 2 and 3 - Windward and Leeward Roof Zone 2 - Sloped Windward Roof Zone 3 - Leeward Roof 4 - Leeward Wall 5 & 6 Sidewalls Zone 7 - Overhang	118.2 psf -27.3 psf +4.9 psf, -11.7 psf -14.6 psf -12.8 psf -16.4 psf 14.4 psf
COMPONENTS AND CLADDING PER ASCE 7 DESIGN WIND PRESSURES WORST CASE	Wall Roof	windward leeward positive negative Zone 4 25.0 psf Zone 5 25.0 psf Zone 1 14.4 psf Zone 2 14.4 psf Zone 3 14.4 psf -27.2 psf -33.5 psf -22.9 psf -48.4 psf -48.4 psf

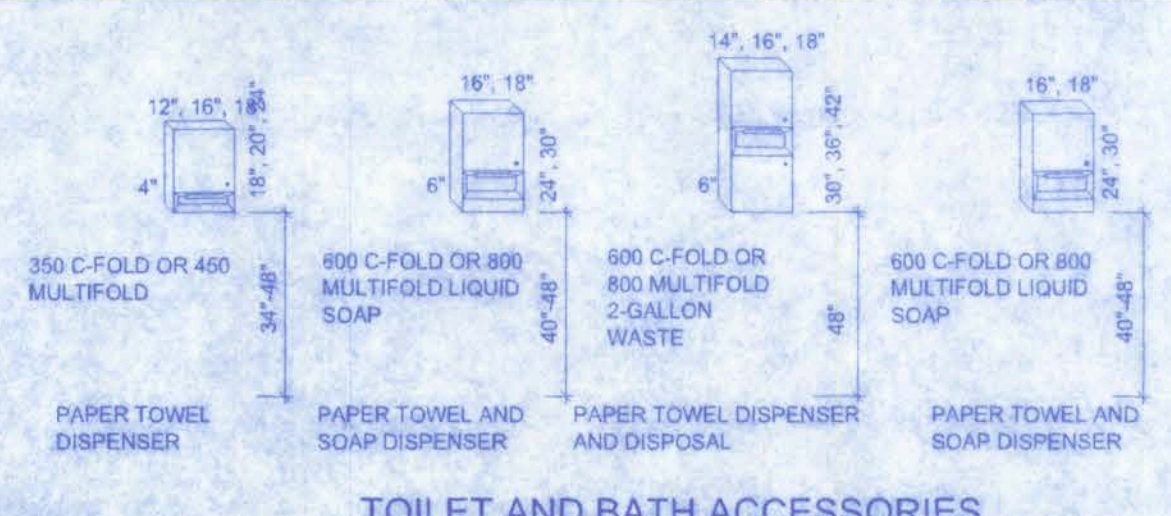


BUILDING USE, CLASSIFICATION & OCCUPANCY AS PER TABLES 503 & 1004.1.1, FLORIDA BUILDING CODE, 2007 ED.	
BUILDING GROUP OCCUPANCY	GROUP M
TABLE 503 TYPE OF CONSTRUCTION	TYPE V-B
TABLE 503 AREA/HEIGHT LIMITATIONS	9.0 KSF/1 STORY
OCCUPANCY	
LOAD CAPACITY: OFFICE: 30 SF/PERSON GROSS	1,728 SF/30 = 57.6 58 PERSONS
	58 OCCUPANTS

MEANS OF EGRESS FBC CHAPTER 10		
OCCUPANCY CLASSIFICATION	UNSPRINKLERED & UNPROTECTED	
GROUP M - Mercantile	REQUIRED	PROVIDED
MAX. TRAVEL DIST. (TABLE 1016.1)	150 FT	84 FT
MAX. DEAD-END CORRIDOR (FBC 1017.3)	20 FT	0 FT
TOTAL # OF EXITS (TABLE 1019.1)	2	2
EGRESS WIDTH PER PERSON (LEVEL) (TABLE 1005.1)	0.2 58 x 0.2 = 11.6"	44"/58 = 0.76
MINIMUM CORRIDOR AISLE WIDTH (FBC 1017.2)	44"	44"
MIN. CLEAR OPENING OF EXIT DOORS (FBC 1008.1.1)	32"	34"

MINIMUM NUMBER OF PLUMBING FACILITIES: TABLES 403.1 FLORIDA PLUMBING CODE, 2007 ED.				
58 OCCUPANTS = 29 MEN & 29 WOMEN				
OCCUPANCY	WATER CLOSETS	LAVS	DRINKING FOUNTAIN	SERVICE SINKS
	M	F	M	F
B	1 per 500 = 1	1 per 750 = 1	1 per 1000 = 1	N/A
PROVIDED	1	1	1	

REQUIRED OUTDOOR VENTILATION AIR (NEW CONSTRUCTION ONLY) TABLES 403.3, FLORIDA MECHANICAL CODE, 2007 ED.		
BUILDING GROUP OCCUPANCY	OCCUPANT LOAD	OUTDOOR AIR (CFM)
Business Offices Retail Stores		0.30 cfm/sq. ft.
restroom		50 cfm per water closet or urinal
1,728 sf x 0.30 + 1*50 cfm = 568 cfm 568 cfm outside air required		



GENERAL STRUCTURAL NOTES:

GENERAL:

1. THE DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN AND EXTENT OF THE WORK AND ARE PARTIALLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENT, OR TO SERVE AS SHOP DRAWINGS OR PORTIONS THEREOF.

2. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUCTED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL OR SECTION IS SHOWN.

3. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR AND ALL THE SUBCONTRACTORS SHALL VERIFY ALL GRADES, LINES, LEVELS, DIMENSIONS AND COORDINATE EXISTING CONDITIONS AT THE JOB SITE WITH THE PLANS AND SPECIFICATIONS. THEY SHALL REPORT ANY INCONSISTENCIES OR ERRORS IN THE ABOVE TO THE ARCHITECT/ENGINEER BEFORE COMMENCING WORK. THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL LAY OUT THEIR WORK FROM ESTABLISHED REFERENCE POINTS AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS AND MEASUREMENTS IN CONNECTION WITH THEIR WORK.

4. IF ANY ERRORS OR OMISSIONS APPEAR IN THE DRAWINGS, GENERAL NOTES OR OTHER DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH OMISSION OR ERROR PRIOR TO PROCEEDING WITH ANY WORK WHICH APPEARS IN QUESTION. IN THE EVENT OF THE CONTRACTOR'S FAILING TO GIVE SUCH AN ADVANCED NOTICE, HE SHALL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS OR OMISSIONS AND THE COST OF RECTIFYING THE SAME.

5. THE CONTRACTOR SHALL USE THE STRUCTURAL DRAWINGS AND SPECIFICATIONS TOGETHER WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND OTHER TRADE DRAWINGS AND SHOP DRAWINGS, TO LOCATE DEPRESSED SLABS, SLOPES, DRAINS, OUTLETS, RECESSES, OPENINGS, JOINT SETTINGS, SLEEVES, DIMENSIONS, ETC. NOTIFY ARCHITECT/ENGINEER, IN WRITING, OF ANY POTENTIAL CONFLICTS BEFORE PROCEEDING WITH THE WORK.

SHOP DRAWINGS AND DELEGATED ENGINEERING:

1. ALL SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEER'S REVIEW ONLY AFTER THEY HAVE BEEN THOROUGHLY REVIEWED BY THE CONTRACTOR FOR CONSTRUCTION METHODS, DIMENSIONS AND OTHER TRADE REQUIREMENTS, AND STAMPED WITH THE CONTRACTOR'S APPROVAL STAMP. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DIMENSIONS, QUANTITIES, ENGINEERING DESIGN BY DELEGATED ENGINEERS, ERRORS OR OMISSIONS AS A RESULT OF REVIEWING ANY SHOP DRAWINGS. ANY ERRORS OR OMISSIONS MUST BE MADE GOOD BY THE CONTRACTOR, IRRESPECTIVE OF RECEIPT CHECKING OR REVIEW OF DRAWINGS BY THE ENGINEER AND EVEN THOUGH WORK IS DONE IN ACCORDANCE WITH SUCH DRAWINGS.

2. BEFORE STRUCTURAL INSPECTIONS CAN BE MADE ON A PORTION OF THE STRUCTURE, ALL RELATED SHOP DRAWINGS, DELEGATED ENGINEERING, PRODUCT APPROVAL, MANUFACTURER'S DATA AND OTHER RELATED INFORMATION, MUST BE REVIEWED AND ACCEPTED BY THE ENGINEER-OF-RECORD AND APPROVED BY THE BUILDING DEPARTMENT.

3. SHOP DRAWINGS SHALL CONTAIN ALL INFORMATION SHOWN ON THE STRUCTURAL PLANS (RELATED TO THE DELEGATED DESIGN) INCLUDING ALL DESIGN LOADS, IN ADDITION TO THE INFORMATION REQUIRED BY THE DELEGATED ENGINEER'S DESIGN.

4. A/E WILL REVIEW ALL SUBMITTED SHOP DRAWINGS, PREPARED AND SIGNED AND SEALED BY THE CONTRACTOR'S DELEGATED ENGINEER, ONLY FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT, REQUIRED LOADS AND COORDINATION WITH THE STRUCTURAL DESIGN.

5. CONTRACTOR SHALL SUBMIT TO THE A/E ONLY ONE SET OF SEPIA AND TWO SETS OF BLUE PRINTS OF THE STRUCTURAL SHOP DRAWINGS FOR A/E REVIEW, BEFORE STARTING FABRICATION. THE A/E WILL RETURN THE MARKED-UP AND STAMPED SEPIA TO THE CONTRACTOR. THESE SEPIA COPIES SHALL BE USED TO MAKE THE PRINTS REQUIRED FOR SHOP DRAWING DISTRIBUTION. SETS OF BLUE PRINTS (WITHOUT SEPIA) WILL NOT BE ACCEPTED.

CONSTRUCTION MEANS AND METHODS:

1. THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE OR PROCEDURES, SAFETY PRECAUTIONS, SHORES, RESHORES, LATERAL BRACING AND PROGRAMS IN CONNECTION WITH THE PROJECT, ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. OUR SERVICES DO NOT GUARANTEE NOR ASSURE LIABILITY FOR THE JOB SAFETY, TEMPORARY SHORING AND BRACING AND THE PERFORMANCE OF THE CONTRACTOR.

2. THE CONTRACTOR IS RESPONSIBLE AND SHALL COMPLY WITH THE SAFETY REQUIREMENTS OF THE STANDARD BUILDING CODE AND APPLICABLE LOCAL, STATE AND FEDERAL LAWS.

3. PROVIDE ALL SHORING, BRACING AND SHEETING AS REQUIRED FOR SAFETY, STRUCTURAL STABILITY AND FOR THE PROPER EXECUTION OF THE WORK. REMOVE WHEN WORK IS COMPLETED.

4. PROVIDE AND MAINTAIN GUARD LIGHTS AT ALL BARRICADES, RAILINGS, OBSTRUCTIONS IN THE STREETS, ROADS OR SIDEWALKS AND ALL TRENCHES OR PITS ADJACENT TO PUBLIC WALKS OR ROADS.

5. AT ALL TIMES, PROVIDE PROTECTION AGAINST WEATHER (RAIN, WIND, STORMS OR THE SUN), SO AS TO MAINTAIN ALL WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE.

6. AT THE END OF THE DAYS WORK, COVER ALL WORK LIKELY TO BE DAMAGED, AND IF DAMAGED BY FAILURE TO PROVIDE PROTECTION SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR SHALL PAY FOR ALL DAMAGES TO ADJACENT STRUCTURES, SIDEWALKS AND TO STREETS OR OTHER PUBLIC PROPERTY OR PUBLIC UTILITIES.

STRUCTURAL DESIGN CRITERIA:

1. THE DESIGN COMPLIES WITH THE REQUIREMENTS OF THE 2004 FLORIDA BUILDING CODE, WITH ALL UPDATES AND OTHER REFERENCED CODES AND SPECIFICATIONS. ALL CODES AND SPECIFICATIONS SHALL BE LATEST EDITION AT TIME OF PERMIT.

2. WIND LOAD CRITERIA:

BASED ON ANSI/ASCE 7-05. BASIC WIND VELOCITY 110 MPH.

3. ROOF DESIGN LOADS:
SUPERIMPOSED DEAD LOADS: 10 PSF
SUPERIMPOSED LIVE LOADS: 20 PSF
CANOPIES: 5 PSF

4. FLOOR DESIGN LOADS:
SUPERIMPOSED DEAD LOADS: 25 PSF
SUPERIMPOSED LIVE LOADS:
SALES AREA FLOOR 100 PSF

5. WIND NET UPLIFT: N/A

FOUNDATIONS: (SPREAD FOOTINGS)

1. FOUNDATIONS ARE DESIGNED TO BEAR ON WELL COMPACTED GRADE OR CLEAN FILL OF AN ALLOWABLE BEARING CAPACITY OF 1,500 PSF MINIMUM. A CERTIFIED TESTING LABORATORY SHALL BE ENGAGED BY THE OWNER TO VERIFY THAT THE REQUIRED BEARING CAPACITY WAS OBTAINED. SAID SOIL CAPACITY SHALL BE CERTIFIED AND TESTED BY A FLORIDA REGISTERED FOUNDATION ENGINEER, PRIOR TO CASTING OF CONCRETE IN THE FOOTINGS.

2. NATURAL GRADE (OR FILL) BELOW FOOTINGS SHALL BE COMPACTED TO 98 % MODIFIED PROCTOR (ASTM D-1557).

3. TOP OF WALL FOOTINGS TO BE AT THE SAME ELEVATION AS TOP OF COLUMN PAD FOOTINGS. STEP WALL FOOTING FROM HIGHER COLUMN FOOTING TO THE LOWER ONE (AS DETAILED ON THE PLANS).

4. TOP OF ALL FOOTINGS TO BE A MINIMUM 1'-4" BELOW THE TOP OF CONCRETE SLAB ON GRADE (UNLESS OTHERWISE NOTED) OR MINIMUM 1'-0" BELOW FINISHED GRADE, WHICHEVER IS LOWER. IN THE EVENT THAT THE SLAB STEPS ON EACH SIDE OF THE FOOTING, THE FOOTING SHALL BE 1'-4" BELOW TOP OF THE LOWER SLAB.

5. REINFORCING IN THE CONTINUOUS WALL FOOTINGS (MONOLITHIC AND NON-MONOLITHIC) SHALL BE SPLICED 36 BAR DIAMETERS MINIMUM AND SHALL EXTEND CONTINUOUSLY THRU ALL FOOTING PADS.

6. ALL LONGITUDINAL REBARS IN THE CONTINUOUS WALL FOOTINGS SHALL BE CONTINUED AT BENTS AND CORNERS BY BENDING THE REBARS 48 BAR DIAMETERS AROUND THE CORNERS OR ADDING MATCHING CORNER BARS, EXTENDING 48 BAR-DIAMETERS INTO FOOTING EACH SIDE OF CORNER OR BENT.

7. ALL FOOTINGS SHALL BE 12" MINIMUM THICKNESS.

CONCRETE SLABS ON GRADE:

1. ALL INTERIOR AND EXTERIOR SLABS AND WALKWAYS AS SHOWN ON THE STRUCTURAL OR ARCHITECTURAL PLANS, SHALL BE FOUR INCHES THICK MINIMUM REINFORCED WITH 6 X 6 - W1.4 X W1.4 WELDED WIRE FABRIC (UNLESS OTHERWISE NOTED).

2. ALL SLABS ON GRADE TO BE CONSTRUCTED IN ACCORDANCE WITH LATEST A.C.I. "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" (A.C.I. -302.1R).

3. JOINTS SHALL BE PROVIDED IN ALL INTERIOR SLABS ON GRADE AT COLUMN CENTER-LINES DIVIDING THE SLAB INTO SQUARE PANELS NOT TO EXCEED 20 X 20 FT. IN SIZE. CAST SLAB IN LONG ALTERNATE STRIPS. PROVIDE A CONTRACTION JOINT BETWEEN EACH STRIP. SEE PLAN FOR SAW-CUT, CONTRACTION AND ISOLATION JOINT DETAILS.

4. PROVIDE SAW-CUT JOINTS AT ALL SIDEWALKS AT A MAXIMUM SPACING OF FIVE FEET ON CENTERS AND ISOLATION JOINTS AT 20 FEET O.C. (U.O.N.).

5. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" AND COMPACTED TO 98 % MODIFIED PROCTOR (ASTM D-1557) WITHIN A DISTANCE OF 3 FEET BEYOND ALL FOOTING EDGES. TAKE AT LEAST ONE DENSITY TEST FOR EACH 1,600 SQ. FT. OF AREA AND 12" BELOW SURFACE. SEND RESULTS OF THE TEST TO OWNER, ARCHITECT AND ENGINEER.

CONCRETE AND REINFORCING:

1. CONCRETE DESIGN AND REINFORCEMENT IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (A.C.I. 318 - LATEST EDITION) AND WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" - (A.C.I. 315 - LATEST EDITION).

2. ALL CONCRETE WORK IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING" (A.C.I. 301 - LATEST EDITION), PRODUCTION OR CONCRETE, DELIVERY, PLACING AND CURING TO BE IN ACCORDANCE WITH "HOT WEATHER CONCRETING" (A.C.I. 305R - LATEST EDITION).

3. ALL CONCRETE TO BE REGULAR WEIGHT WITH A DESIGN STRENGTH OF 2,500 P.S.I. AT 28 DAYS. MAXIMUM SLUMP 5".

4. ALL REINFORCING TO BE NEW BILLET STEEL CONFORMING TO THE LATEST A.S.T.M. A-615 GRADE 60, FABRICATED IN ACCORDANCE WITH C.R.S.I. MANUAL OF STANDARD PRACTICE AND PLACED IN ACCORDANCE WITH A.C.I. 315 AND C.R.S.I. MANUAL OF STANDARD PRACTICE.

5. CONCRETE COVER UNLESS OTHERWISE DETAILED ON DRAWINGS:

FOOTINGS: (BOTTOM) 3"
(TOP & SIDES) 2"

SLABS ON GRADE: CENTERED W/SLAB

COLUMNS AND BEAMS: (TO THE TIES) 1-1/2"

6. COLUMN REINFORCEMENT: DOWELS TO BE SAME SIZE AND NUMBER AS VERTICAL REBARS ABOVE. LAP 36 BAR DIAMETER OR MINIMUM OF 18 INCHES, U.O.N. PROVIDE RIGID TEMPLATES FOR DOWEL LOCATION. PROVIDE STANDARD HOOKS AT TOP OF ALL VERTICAL REINFORCEMENT AT NONCONTINUOUS COLUMNS (U.O.N.).

7. ALL DOWELS FOR COLUMNS SHALL BE SECURED IN POSITION PRIOR TO CONCRETING. PUSHING THE DOWELS INTO POSITION IN WET CONCRETE IS NOT PERMITTED.

8. BEAM REINFORCEMENT: LAPPED 36 BAR DIAMETER OR MINIMUM 18 INCHES. BOTTOM BARS SPLICED ONLY AT SUPPORTS. TOP BARS SPLICED ONLY AT MID-SPAN. ALL TOP BARS HOOKED AT NONCONTINUOUS EDGES (U.O.N.). ALL HOOKS TO BE STANDARD 90 DEGREE HOOKS AS REQUIRED (U.O.N.).

9. ADDED REINFORCEMENT: PROVIDE ADDITIONAL CORNER BARS BENT 36 INCHES MINIMUM EACH WAY AT "L" AND "T" CORNERS IN OUTER FACES OF ALL BEAMS TO MATCH ALL HORIZONTAL BAR (TOP, BOTTOM AND INTERMEDIATE REBARS).

10. SEE PLAN FOR MINIMUM SIZE CONCRETE TIE BEAM REQUIREMENTS.

REINFORCED MASONRY WALLS:

1. HOLLOW LOAD-BEARING MASONRY UNITS SHALL CONFORM TO ASTM C-90, TYPE I, GRADE N, SQUARE END, WITH A MINIMUM AVERAGE COMPRESSIVE STRENGTH ON NET AREA OF $f_m=2,000$ (PSI). CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 530.1 SPECIFICATIONS.

2. SPECIAL INSPECTOR SERVICES ARE REQUIRED FOR ALL REINFORCED MASONRY CONSTRUCTION. THE SPECIAL INSPECTOR SHALL INSPECT THE PLACING OF THE REBARS IN THE CELLS, VERIFY CLEANLINESS OF THE CELLS TO BE GROUTED, AND OBSERVE THE PLACING OF THE GROUT OR CONCRETE INTO THE CELLS.

3. MORTAR SHALL CONFORM TO ASTM C-270, TYPE "M" OR "S".

4. LAY ALL MASONRY WITH FULL FACE HEAD JOINTS AND WITH FACE SHELL MORTAR BEDDING.

5. MASONRY ANCHORAGE TO SUPERSTRUCTURE SHALL BE PROVIDED IN ACCORDANCE WITH STRUCTURAL DRAWINGS AND DETAILS.

6. THE USE OF ADMIXTURES SHALL NOT BE PERMITTED WITHOUT PRIOR REVIEW OF THE ENGINEER.

7. VERTICAL REINFORCING:

(A) ASTM A-615 PER REINFORCING SECTION.

(B) WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL INCH TO SIX INCHES VERTICAL FOR ALIGNMENT, EVEN THOUGH IT IS IN A CELL ADJACENT TO THE VERTICAL WALL REINFORCING.

(C) VERTICAL REINFORCING STEEL SHALL BE PLACED CENTERED IN THE CELL. LAP 48 BAR-DIAMETERS. PROVIDE BAR SPACERS AS REQUIRED TO MAINTAIN REINFORCING SECURED IN POSITION.

(D) VERTICAL REINFORCEMENT SHALL BE PROVIDED AT EACH SIDE OF OPENINGS IN WALL, AT WALL INTERSECTIONS, CORNERS AND ENDS. THIS REINFORCING SHALL BE THE SAME SIZE AS THE SCHEDULED WALL REINFORCING FOR THE PARTICULAR WALL BUT NEVER LESS THAN A #5 REBAR. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT CELLS TO BE GROUTED LINE UP PROPERLY AND ARE CLEAN OF EXCESS MORTAR.

(E) ALL VERTICAL REINFORCING SHALL BE HOOKED INTO THE BOND BEAMS AT THE NON-CONTINUOUS END OF THE REBARS.

(F) PROVIDE INSPECTION HOLES AT THE BOTTOM OF EACH REINFORCED MASONRY CELL, AS REQUIRED FOR LIFTS HIGHER THAN 5 FT.

8. HORIZONTAL REINFORCING:

PROVIDE GALVANIZED #9 GAGE, LADDER TYPE HORIZONTAL JOINT REINFORCING EVERY SECOND BLOCK COURSE (1'-4" O.C. VERTICALLY) LAPPED 7'-12". PROVIDE SPECIAL HORIZONTAL REINFORCING AT "T" AND "L" INTERSECTION. ANCHOR TO COLUMNS WITH MINIMUM 4" EXTENSION INTO AREA OF POUR.

9. PROVIDE "DOVE-TAIL" ANCHORS AT 16" O.C. VERTICALLY FOR ALL MASONRY PLACED ADJACENT TO ALREADY IN PLACE COLUMNS.

10. CELL FILLING CONCRETE SHALL BE "PEA DOCK" CONCRETE MIX (8" TO 9" SLUMP) OR GROUT WITH $f_c=3,500$ PSI MIN. AT 28 DAYS.

11. LINTELS:

A. THE CONTRACTOR SHALL PROVIDE PRECAST CONCRETE OR CAST-IN-SITE LINTELS AT THE HEADS OF ALL OPENINGS IN MASONRY WALLS NOT EXCEEDING SIX (6) FEET IN WIDTH WHERE BEAMS HAVE NOT BEEN SPECIFIED. FOR OPENING ADJACENT TO CONCRETE COLUMNS - THE LINTEL SHALL BE CAST-IN-PLACE WITH THE COLUMN.

B. LINTEL MAY BE INTEGRAL WITH THE STRUCTURAL OR TIE BEAM WHEN HEAD OF THE OPENING IS 16 INCHES OR LESS BELOW. CONTINUE BEAM'S TYPICAL BOTTOM REBARS THROUGH AND ADD 2-#5 BOTTOM TRUSS BARS AT DROPS AND 2-#3 STIRRUPS AT 6 INCHES O.C. EACH END AT DROP.

C. MINIMUM BEARING FOR ALL LINTELS 8 INCHES EACH SIDE OR PROVIDE DOWELS AND POCKETS IN ADJACENT CONCRETE COLUMNS.

D. LINTEL TO BE MINIMUM OF 8 INCHES DEEP WITH 2-#4 TOP AND BOTTOM FOR CLEAR SPANS LESS THAN 6 FEET, 12 INCHES DEEP WITH 2-#5 TOP AND BOTTOM AND 2-#3 STIRRUPS AT 6 INCHES O.C. EACH END, FOR SPANS GREATER THAN 6 FEET (UP TO 8 FEET). CALL ENGINEER FOR SPANS LARGER THAN 8 FEET WITH NO SPECIFIED BEAMS OR LINTELS OVER.

STRUCTURAL STEEL: (SHOP DRAWINGS REQUIRED)

1. ALL STRUCTURAL STEEL TO BE DOMESTIC A.S.T.M. A-36 ($F_y=36$ K.S.I.) AND DESIGNED IN ACCORDANCE WITH THE LATEST A.I.S.C. "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" AND THE A.I.S.C. CODE OF STANDARD PRACTICE.

2. STEEL TUBES TO BE DOMESTIC STEEL CONFORMING TO A.S.T.M. A-500 GRADE B ($F_y=46$ K.S.I.).

TUBE AND PIPE COLUMNS TO BE CONCRETE FILLED WITH VENT HOLES TOP, MIDDLE AND BOTTOM.

3. ALL COLUMN BASE AND CAP PLATES SHALL BE 3/4" THICK (UNLESS OTHERWISE NOTED). WIDTH AND LENGTH AS REQUIRED FOR PROPER BOLTING AND AS INDICATED ON THE PLANS AND DETAILS.

4. ALL WELDING TO BE IN ACCORDANCE WITH A.W.S. LATEST "STRUCTURAL WELDING CODE - STEEL". CLEAN AND RUSTPROOF ALL FIELD WELDS WITH HEAVY DUTY RUSTPROOFING PAINT.

5. ALL CONNECTIONS TO BE FIELD AND SHOP WELDED AND TO DEVELOP MEMBER IN SHEAR.

6. SPLICE LOCATIONS TO BE REVIEWED BY ARCHITECT/ENGINEER.

7. STEEL BEARING ON STEEL TO BE WELDED THERETO.

STRUCTURAL WOOD:

1. TO CONFORM TO RULES OF THE MANUFACTURER'S ASSOCIATION UNDER WHOSE RULES THE LUMBER IS PRODUCED. (SEE SUPPLIER'S SPECIFICATIONS).

2. TO BE AIR DRIED, WELL SEASONED AND GRADE MARKED AT MILL.

3. TO BE NO. 2 SOUTHERN PINE, UTILITY GRADE DOUGLAS FIR OR WEST COAST HEMLOCK.

4. ALL STRUCTURAL WOOD TO BE SURFACED FOUR (4) SIDES (S-4-S) WITH A MINIMUM FIBER STRESS IN BENDING OF 1,200 P.S.I. AND A MAXIMUM MOISTURE CONTENT OF 19 PERCENT.

5. ALL LUMBER AND PLYWOOD IN CONTACT WITH CONCRETE, STUCCO, MASONRY OR OTHER CEMENTITIOUS MATERIALS SHALL BE TREATED TO COMPLY WITH AWPA STANDARD LP-2.

6. STORE ALL LUMBER ABOVE GRADE OR FLOOR. STACK TO ALLOW PROPER AIR CIRCULATION AND PROTECT FROM WETTING WITH SUITABLE COVER.

COLD FORMED METAL FRAMING: (SHOP DRAWINGS REQUIRED)

1. ALL COLD FORMED METAL FRAMING SHALL BE DOMESTIC A.S.T.M. A 853 ($F_y=33$ K.S.I.) STEEL AND DESIGNED IN ACCORDANCE WITH THE LATEST S.S.M.A. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF COLD FORMED METAL FRAMING AND THE S.S.M.A. CODE OF STANDARD PRACTICE.

2. ALL CFMF COMPONENTS SHALL BE MANUFACTURED AS PER ASTM C 955 AND BE GALVANIZED WITH A MINIMUM G-60 COATING PER ASTM C 955.

ALL PRODUCTS SHALL BE FREE OF RUST, DENTS, BENDS & TWISTS AND STORED ON A FLAT PLANE PRIOR TO INCLUSION IN THE WORK.

3. ALL WELDING TO BE IN ACCORDANCE WITH A.W.S. LATEST, E1.3 & D1.3 "STRUCTURAL WELDING CODE - STEEL". CLEAN AND RUSTPROOF ALL FIELD WELDS WITH ZINC RICH RUSTPROOFING PAINT.

4. BOTTOM TRACK SHALL BE SECURED TO THE CONCRETE FOUNDATION W/ ANCHOR BOLTS AS PER THE FOUNDATION PLAN AND SHALL BE FURTHER FASTENED AT EA. FULL STUD W/ .177" X 1 1/2" PAF, SHOT THROUGH A 1" X 16 GA HOLELESS WASHER.

5. ALL CONNECTIONS TO BE FIELD AND SHOP WELDED AND TO FULLY DEVELOP MEMBER IN SHEAR.

6. SPLICE LOCATIONS TO BE REVIEWED BY ARCHITECT/ENGINEER.

7. STEEL BEARING ON STEEL TO BE WELDED THERETO.

TERMITE PROTECTION NOTES:

SOIL CHEMICAL BARRIER METHOD:

1. A PERMANENT SIGN WHICH IDENTIFIES THE TERMITE TREATMENT PROVIDER AND NEED FOR REINSPECTION AND TREATMENT CONTRACT RENEWAL SHALL BE PROVIDED. THE SIGN SHALL BE POSTED NEAR THE WATER HEATER OR ELECTRIC PANEL. FBC 104.2.6.

2. CONDENSATE AND ROOF DOWNSPOUTS SHALL DISCHARGE AT LEAST 1'-0" AWAY FROM BUILDING SIDE WALLS. FBC 1503.4.4.

3. IRRIGATION/SPRINKLER SYSTEMS INCLUDING ALL RISERS AND SPRAY HEADS SHALL NOT BE INSTALLED WITHIN 1'-0" FROM BUILDING SIDE WALLS. FBC 1503.4.4.

4. TO PROVIDE FOR INSPECTION FOR TERMITE INFESTATION, BETWEEN WALL COVERINGS AND FINAL EARTH GRADE SHALL NOT BE LESS THAN 6" EXCEPTION: PAINT AND DECORATIVE CEMENTIOUS FINISH LESS THAN 5/8" THICK ADHERED DIRECTLY TO THE FOUNDATION WALL. FBC 1403.1.6.

5. INITIAL TREATMENT SHALL BE DONE AFTER ALL EXCAVATION AND BACKFILL IS COMPLETE. FBC 1816.1.1.

6. SOIL DISTURBED AFTER THE INITIAL TREATMENT SHALL BE RETREATED INCLUDING SPACES BOXED OR FORMED. FBC 1816.1.2.

7. BOXED AREAS IN CONCRETE FLOOR FOR SUBSEQUENT INSTALLATION OF TRAPS, ETC., SHALL BE MADE WITH PERMANENT METAL OR PLASTIC FORMS. PERMANENT FORMS MUST BE OF A SIZE AND DEPTH THAT WILL ELIMINATE THE DISTURBANCE OF SOIL AFTER THE INITIAL TREATMENT. FBC 1816.1.3.

8. MINIMUM 6 MIL VAPOR RETARDER MUST BE INSTALLED TO PROTECT AGAINST RAINFALL DILUTION. IF RAINFALL OCCURS BEFORE VAPOR RETARDER PLACEMENT, RETREATMENT IS REQUIRED. FBC 1816.1.4.

9. CONCRETE OVERPOUR AND MORTAR ALONG THE FOUNDATION PERIMETER MUST BE REMOVED BEFORE EXTERIOR SOIL TREATMENT. FBC 1816.1.5.

10. SOIL TREATMENT MUST BE APPLIED UNDER ALL EXTERIOR CONCRETE OR GRADE WITHIN 1'-0" OF THE STRUCTURE SIDEWALLS. FBC 1816.1.6.

11. AN EXTERIOR VERTICAL CHEMICAL BARRIER MUST BE INSTALLED AFTER CONSTRUCTION IS COMPLETE INCLUDING LANDSCAPING AND IRRIGATION. ANY SOIL DISTURBED AFTER THE VERTICAL BARRIER IS APPLIED, SHALL BE RETREATED. FBC 1816.1.6.

12. ALL BUILDINGS ARE REQUIRED TO HAVE PER-CONSTRUCTION TREATMENT. FBC 1816.1.7.

13. A CERTIFICATE OF COMPLIANCE MUST BE ISSUED TO THE BUILDING DEPARTMENT BY A LICENSED PEST CONTROL COMPANY BEFORE A CERTIFICATE OF OCCUPANCY WILL BE ISSUED. THE CERTIFICATE OF COMPLIANCE SHALL STATE: "THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF SUBTERRANEAN TERMITES. THE TREATMENT IS IN ACCORDANCE WITH THE RULES AND LAWS OF THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES". FBC 1816.1.7.

14. AFTER ALL WORK IS COMPLETED, LOOSE WOOD AND FILL MUST BE REMOVED FROM BELOW AND WITHIN 1'-0" OF THE BUILDING. THIS INCLUDES ALL GRADE STAKES, TUB TRAP BOXES, FORMS, SHORING OR OTHER CELLULOSE CONTAINING MATERIAL. FBC 2303.1.3.

15. NO WOOD, VEGETATION, STUMPS, CARDBOARD, TRASH, ETC., SHALL BE BURIED WITHIN 15'-0" OF ANY BUILDING OR PROPOSED BUILDING. FBC 2303.1.4.

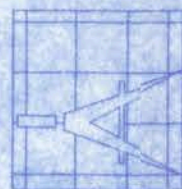
PACKAGE SHACK

128 SW NASSAU STREET

LAKE CITY, FL 32025

(800)750-4600

CERTIFICATE OF AUTHORIZATION # 00008701



Freeman
Design Group

DATE
06/24/09

DRAWN BY
W.H.F.

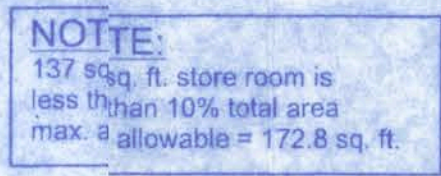
APPROVED
W.H.F.

REVISIONS

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A-2

OF
9

PROJECT NO.
09.020



CERTIFICATE OF AUTHORIZATION # 00008701

PANEL BOARD SCHEDULE

PANEL: _____ RPL. A: _____ LOCATION: _____ UTILITY: _____
 TYPE: _____ MAIN LUGS: _____ MAIN BREAKER: _____ AMP: _____
 VOLTS: _____ PHASE: _____ WIRE: _____ SINGLE POLES: _____
 A/C RATING: _____ FEEDER SIZE: _____
 MOUNTING SURFACE: _____ FEED TOP: _____
 OVERHEAD REAR PANEL: _____
 TOTAL KW LOAD: _____

WIRE	IND.	COND.	APPLICATION	LOAD	CIR.	BRK.	BRK.	CIR.	LEG.	APPLICATION	COND.	IND.	WIRE
12	12	3/4"	1/2" Hp motor	1	20/2	20/2	2			1/2" Hp motor	3/4"	12	12
				3			4						
12	12	1"	1/2" Hp motor	5	20/2	30/2	6			water heater	3/4"	12	10
				7			8						
12	12	1/2"	EM LIGHTING	9	20/1		10	20		RECEPTACLES	1/2"	12	10
12	12	1/2"	EXT. LIGHTING	11	20/1		12	20		RECEPTACLES	1/2"	12	12
12	12	1/2"	LIGHTING	13	20/1		14	20		RECEPTACLES	1/2"	12	12
12	12	1/2"	LIGHTING	15	20/1		16	20		LIGHTING	1/2"	12	12
12	12	1/2"	EXT. LIGHTING	17	20/1		18	20		LANDSCAPE LIGHTS	1/2"	12	12
			SPACE							SPACE			
			SPACE							SPACE			
				33			40						

GENERAL LIGHTING LAOD (CONTINUOUS)

MERCANTILE BUILDING	1728
TOTAL AREA OF ADDITION (SF)	5184
3.0 VA PER SQUARE FOOT	1500
SUBTOTAL	1875
DEMAND FACTOR 125 %	1875 watts

OUTSIDE LIGHTING (CONTINUOUS)

1500 VA X 125% =	1875 watts
------------------	------------

RECEPTACLE LOADING (NON-CONT.)

Number of Receptacles	20
180 VA per receptacle	3,600
FIRST 10,000 VA X 100% =	3,600
REMAINING 800 X 50% =	0
	3,600 watts

WATER HEATER

4,500 VA per water heater	4500 watts
1 Number of water heaters	

HEATING LOADS

auxiliary heat	5,000
heat pumps =	10,000
2	
TOTAL	10,000 watts

A/C MOTOR LOADS

3.5 ton split system	4,800
air handlers =	9,600
2	
TOTAL	9,600 watts

MOTOR LOADS

1/2" HP Motor	2400
number of motors	3
	7200 watts

CALCULATING LARGEST MOTOR LOAD

Auxiliary heat	5000
demand factor =	25 %
	1250 watts

OCPD

GENERAL LIGHTING	1875
OUTSIDE LIGHTING	1875
RECEPTACLE LOAD	3,600
WATER HEATER	4,500
HEATING LOADS	10,000
A/C LOADS	9,600
MOTOR LOADS	7,200
LARGEST MOTOR	7200
TOTAL LOAD	45,850 watts

I = total load/240 191.0417 AMPS

USE 200 AMP SINGLE PHASE POWER 120/240

WIRING NOTES:

WIRING, DISTRIBUTION EQUIPMENT AND DEVICES

A. CONDUCTORS: Copper, in accordance with ASTM Standards, size reference AWG. Conductors No. 10 and smaller size solid, No. 8 and Larger, Stranded. Insulation of conductor thermoplastic, type THHN (min. size No. 12) any wire installed outside, underground, in slabs or exposed to moisture shall have THWN insulation.

B. RACEWAYS: RIGID STEEL CONDUIT, full weight pipe galvanized, threaded, and minimum 1/2 inch except as noted or required for wiring. ELECTRICAL METALLIC TUBING (EMT), thin wall pipe, galvanized, threadless, compression fittings, and minimum 1/2" size except as noted or required for wiring. FLEXIBLE STEEL CONDUIT: continuous single strip, galvanized, and minimum 1/2" size except as noted or required for wiring. PVC CONDUIT, heavy duty type, size as indicated. Separate raceways shall be used for each voltage system.

C. DISCONNECT SWITCHES: General Duty, horsepower rated for motor loads 250 volt rating, fused or non-fused as noted, number of poles as indicated. Enclosure NEMA 1 for indoor use and NEMA 3R for weatherproof applications. Switch to be Square "D" or equal.

D. CIRCUIT BREAKERS: molded case, thermal-magnetic, quick make, quick break, bolt-on type with manually operated insulated trip-free handle. Multi-pole types with internal common trip bar. Terminals suitable for copper or aluminum conductors. Interrupting capacity minimum 10,000 RMS symmetrical amperes circuit breakers to be Square "D", Siemens or equal, type as required.

E. PANELBOARDS: Voltage, phasing, and ampere ratings as indicated. circuit breaker type as indicated, bus bars of hard drawn copper, minimum 98% conductivity, galvanized steel back box, door and trim. All corners lapped and welded, hardware chrome plated with flush lock and catch. Hinges semi-concealed, 5 knuckles steel with nonferrous pins. 180 degree openings. Minimum gutter space 5-3/4" sides, top and bottom. Increase size where required by code. Directory holder complete with clear plastic transparent cover indicating typewritten list of feeder cables, conduit sizes, circuit number, outlets of equipment supplied, and their location. Circuit breaker type panelboards to be Square "D" type NQOD or I-Line, or equal. A plastic label shall be located on exterior of panelboard identifying the system voltage, phase, and current rating.

F. WIRING DEVICES: All devices their product of the same manufacturer. Wall switches and receptacles to be 20 amp, 125 volt, unless noted otherwise. Color to be selected by Architect.

G. DEVICE PLATES: provide for all outlets where devices are installed. Provide engraved marking for special outlets (where noted). Provide blank plates for empty or future outlet boxes. DEVICE AND DEVICE PLATE COLORS TO BE VERIFIED WITH ARCHITECT AND OWNER.

H. GROUNDING SYSTEM: a. EQUIPMENT: Ground non-current carrying metal parts of panel board, raceways and all lighting fixtures. All conduit shall have equipment grounding conductors.

I. INSTALLATION: A. Secure all supports to building structure as specified under raceways. Support horizontal runs of metallic conduit not more than 10 feet apart. Run exposed raceways parallel with or at right angles to walls.

B. Pass raceways over water, steam or other piping when pull boxes are not required. no raceway within 3 inches of steam or hot water pipes, or appliances. expect crossing where the raceway shall be at least 2 inches from pipe cover.

C. Cut conduit ends square, ream smooth. Paint male threads of field threaded conduit with Graphite based pip compound. Draw up tight with conduit couplings.

D. Leave wire sufficiently long to permit making final connections. In raceway over 50 feet in which wiring is not installed, furnish pull wire.

E. Verify locations of outlets and switches.

F. Support panel, junction and pull boxes independently to building structure with no weight bearing on conduits.

G. Connect conduit to motor conduit terminal bases with flexible conduit; minimum 18 inches in length and 50% slack. Do not terminate in or fasten raceways to motor foundation.

H. This contractor shall provide a temporary electrical distribution system as required: 120/208 volt, 1 phase, 100 amp, for new construction. All temporary work shall be installed in a neat and safe manner.

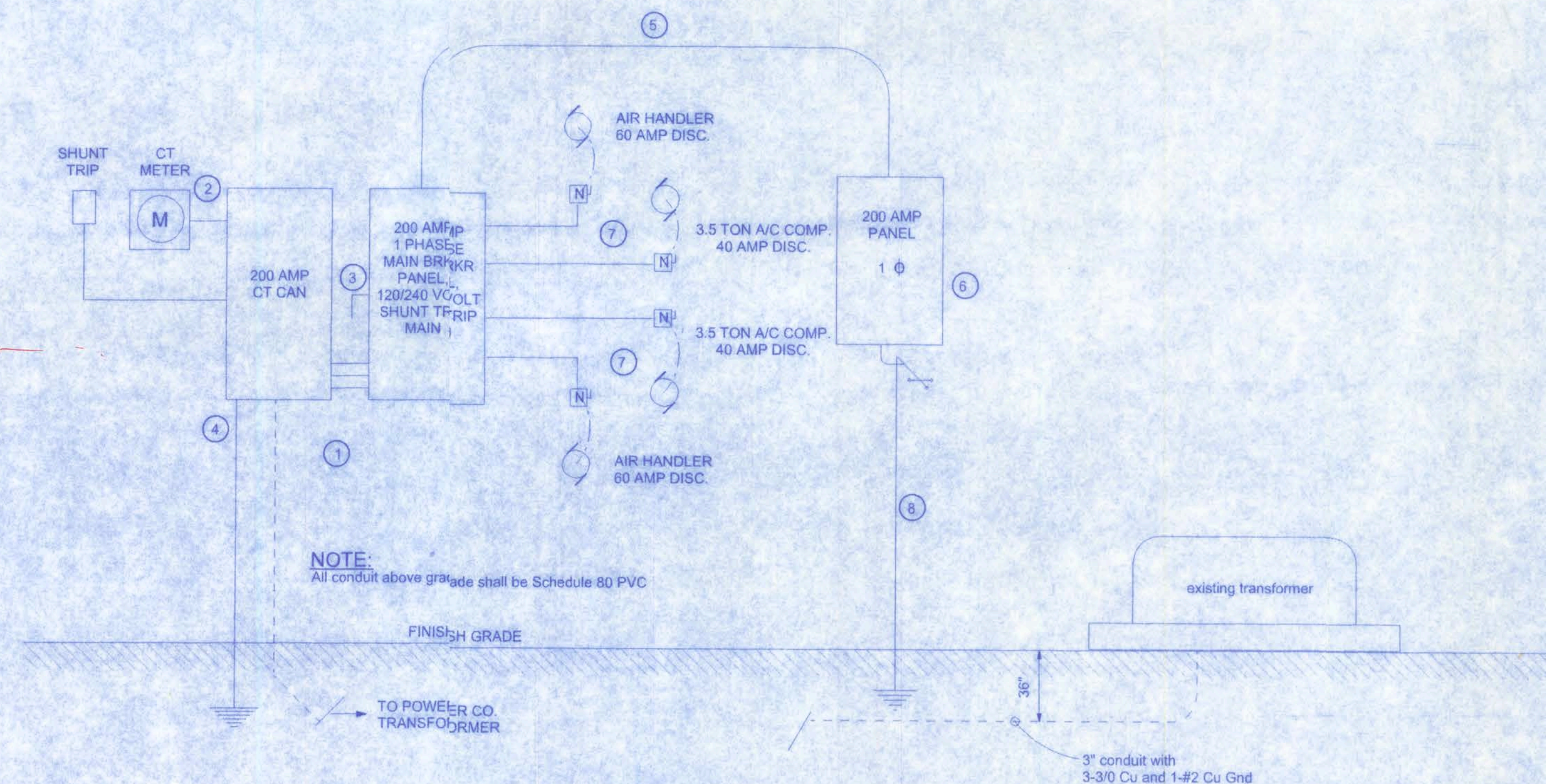
I. Contractor to remove and salvage all abandoned electrical equipment.

J. This contractor shall warrant all labor and materials for one year from date of final written acceptance.

- Service/Feeder Entrance Conductors: 2 1/2" rjd conduit, min 18" deep, w. continuous ground bonding conductor. Service/Entrance Conductors shall not be spliced except that bolted connections at the Meter, Disconnecting Device and Panel shall be allowed.
- Meter Enclosure, weatherproof, U.L. Listed.
- Main Disconnect Switch: fused or Main Breaker weatherproof, U.L. Listed.
- Service entrance ground: 5/8" diameter iron/steel rod x 8'-0" long and/or concrete encased foundation steel bar x 20'-0" long. Grounding conductor shall be bonded to each piece of Service/Entrance Equipment, and shall be size per Item #5 below.
- 200 Ampere Feeder: 3-3/0-THW-Cu, 1-#2-Cu-MD, 2 1/2" Conduit.
- House Panel (PNL), U.L. Listed, sized per schedule.
- Equipment Disconnect Switch: non-fused, in weather proof enclosure, size according to Panel Schedule lists.
- Provide Ground Bond Wire to metal piping, size in accordance with the Service Ground Conductor.

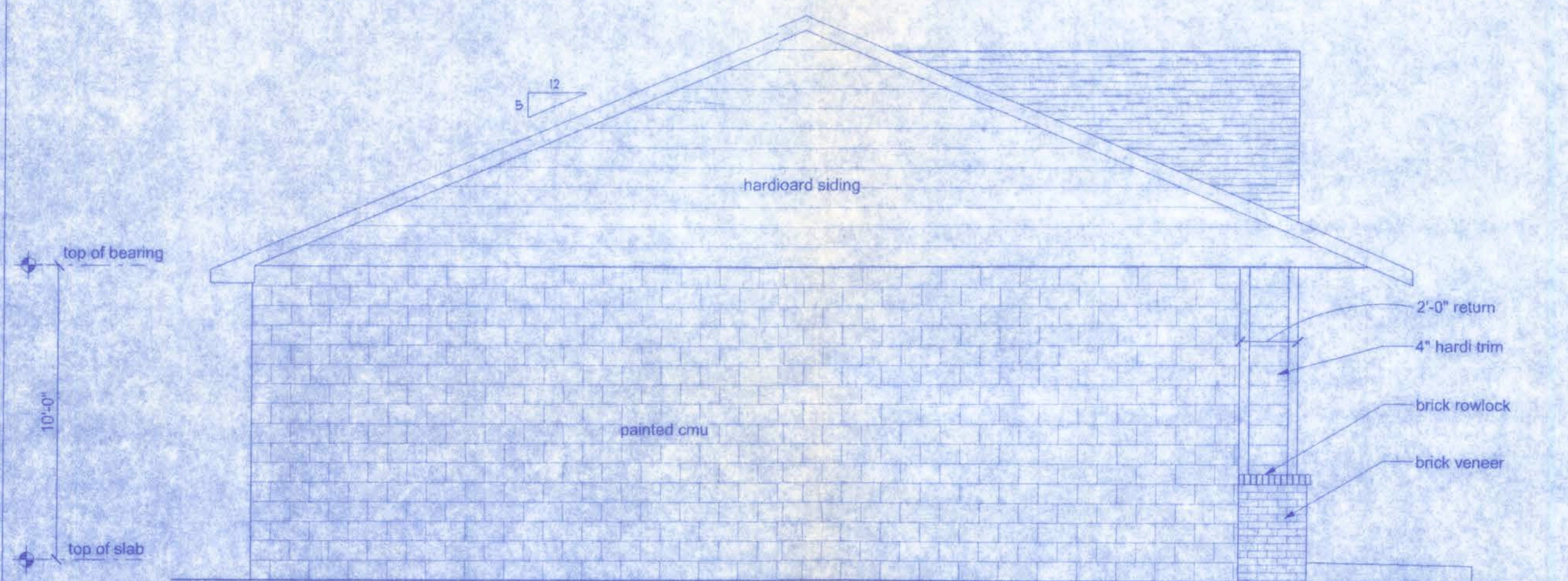
NOTE:

The minimum AIC rating for panel boards, breakers and disconnect switches shall be 10,000 AIC.

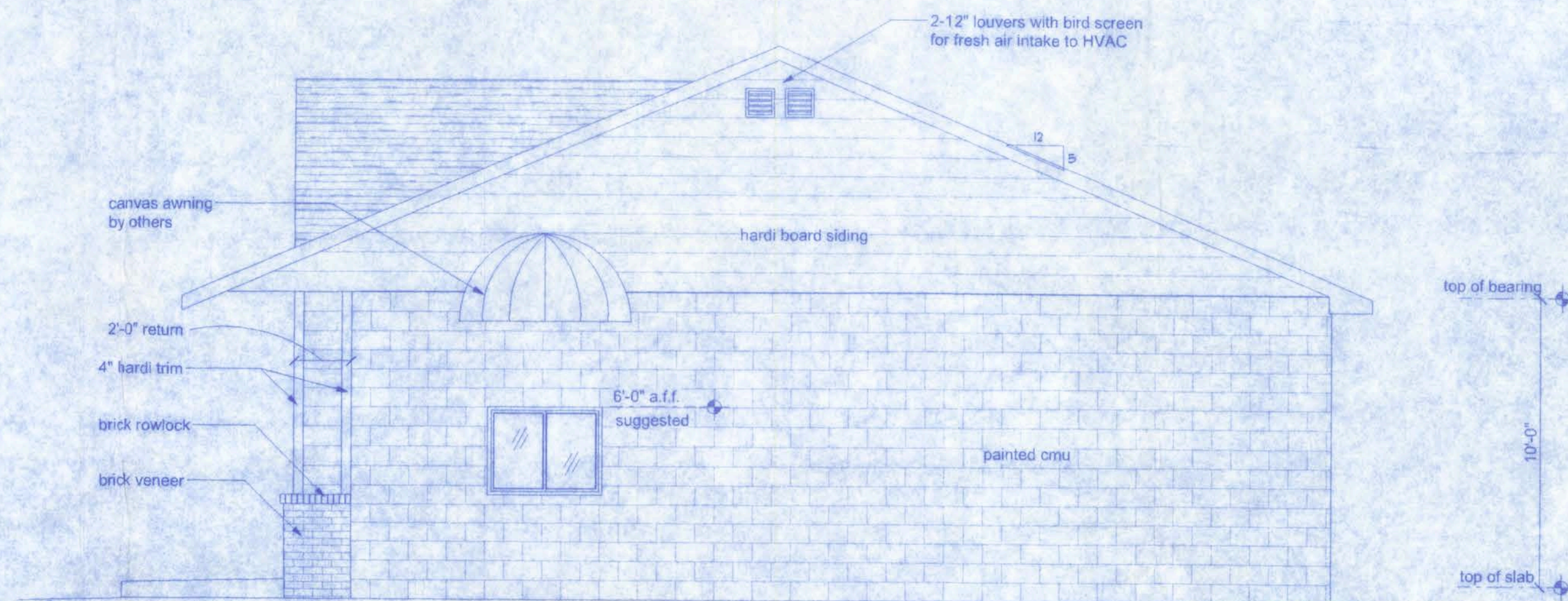




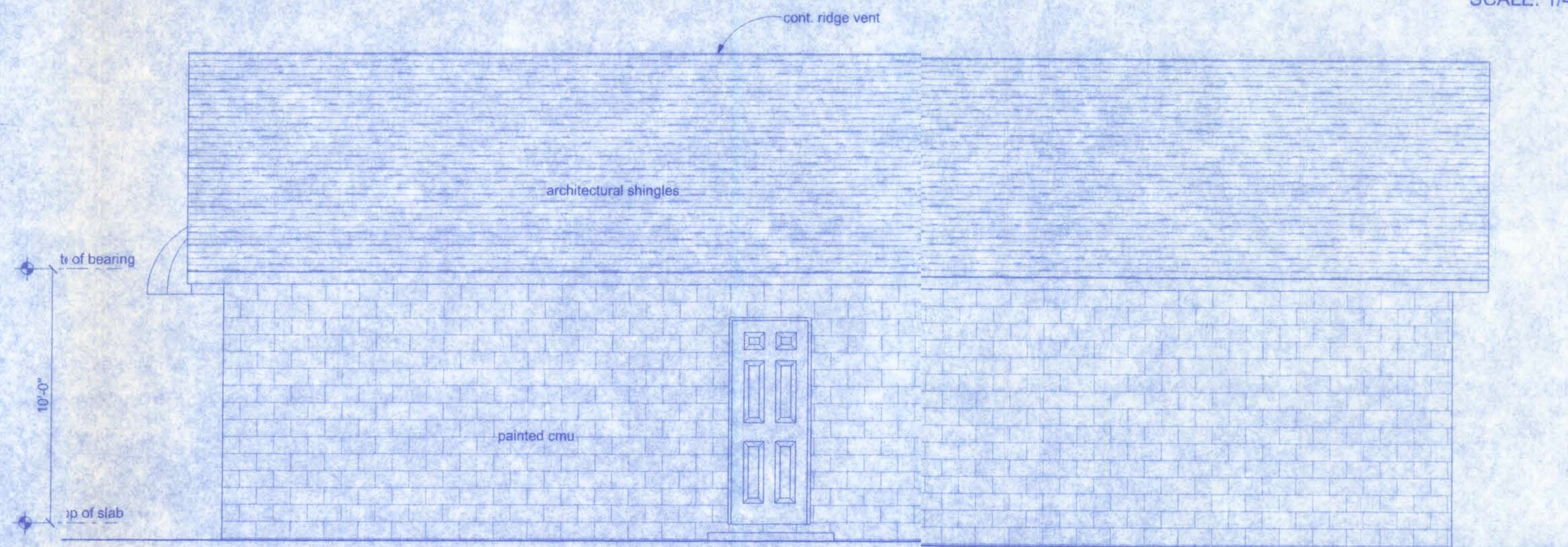
FRONT ELEVATION
SCALE: 1/4" = 1'-0"



FRONT ELEVATION
SCALE: 1/4" = 1'-0"



FRONT ELEVATION
SCALE: 1/4" = 1'-0"

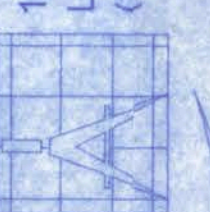


FRONT ELEVATION
SCALE: 1/4" = 1'-0"

William H. Freeman
7/6/09
P.E. # 50001

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32025
(386) 758-4200



Freeman
Design Group Inc.

CERTIFICATE OF AUTHORIZATION # 00008701

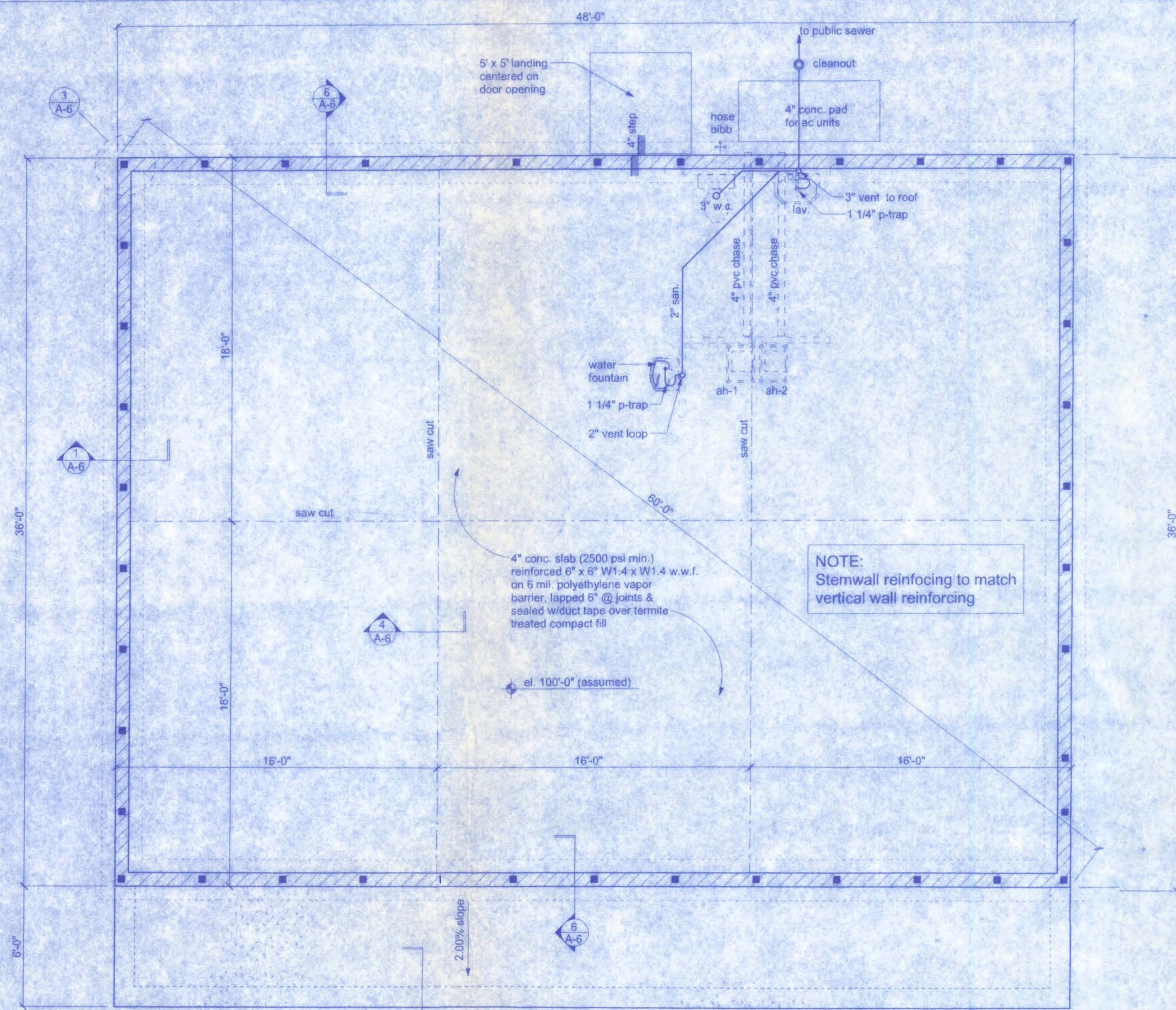
DATE	DRAWN BY
08/24/09	W.H.F.
	APPROVED
	W.H.F.

REVISIONS

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OF	9
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PROJECT NO.	08.C120
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FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION NOTES

CONCRETE:
CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.

REINFORCING STEEL:
THE REINFORCING STEEL SHALL BE MINIMUM GRADE 40.

COVER OVER REINFORCING STEEL:
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE:

3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER AND 1 1/2 INCHES ELSEWHERE. REINFORCING BARS EMBEDDED IN GROUTED CELLS SHALL HAVE A MINIMUM CLEAR DISTANCE OF 1/4 INCH FOR FINE GROUT OR 1/2 INCH FOR COARSE GROUT BETWEEN REINFORCING BAR AND ANY FACE OF A CELL. REINFORCING BARS USED IN MASONRY WALLS SHALL HAVE A MASONRY COVER (INCLUDING GROUT) OF NOT LESS THAN 2 INCHES FOR MASONRY UNITS WITH FACE EXPOSED TO EARTH OR WEATHER 1 1/2 INCHES FOR MASONRY UNITS NOT EXPOSED TO EARTH OR WEATHER.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

1. ALL REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS AND
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

EXCEPTION: WHERE BENDING IS NECESSARY TO ALIGN DOWEL BARS WITH A VERTICAL CELL, BARS PARTIALLY EMBEDDED IN CONCRETE SHALL BE PERMITTED TO BE BENT AT A SLOPE OF NOT MORE THAN 1 INCH OF HORIZONTAL DISPLACEMENT TO 6 INCHES OF VERTICAL BAR LENGTH.

GALVANIZATION:
METAL ACCESSORIES FOR USE IN EXTERIOR WALL CONSTRUCTION AND NOT DIRECTLY EXPOSED TO THE WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153, CLASS B-2. METAL PLATE CONNECTORS, SCREWS, BOLTS AND NAILS EXPOSED DIRECTLY TO THE WEATHER SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED.

NOTE!

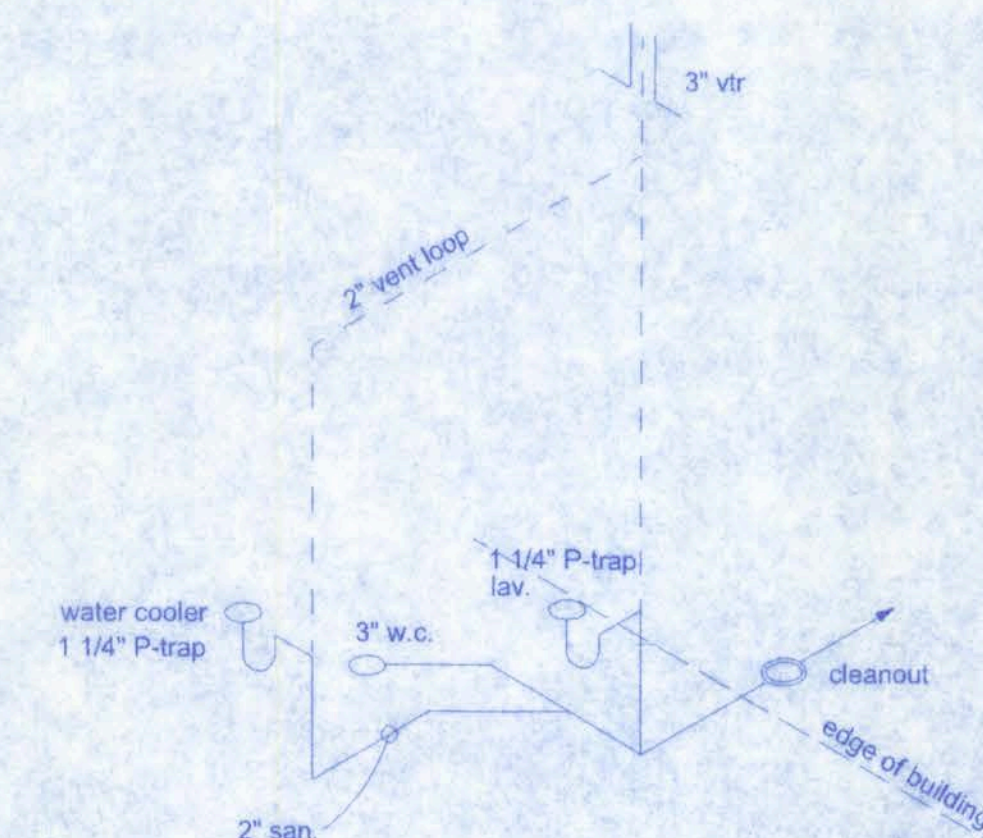
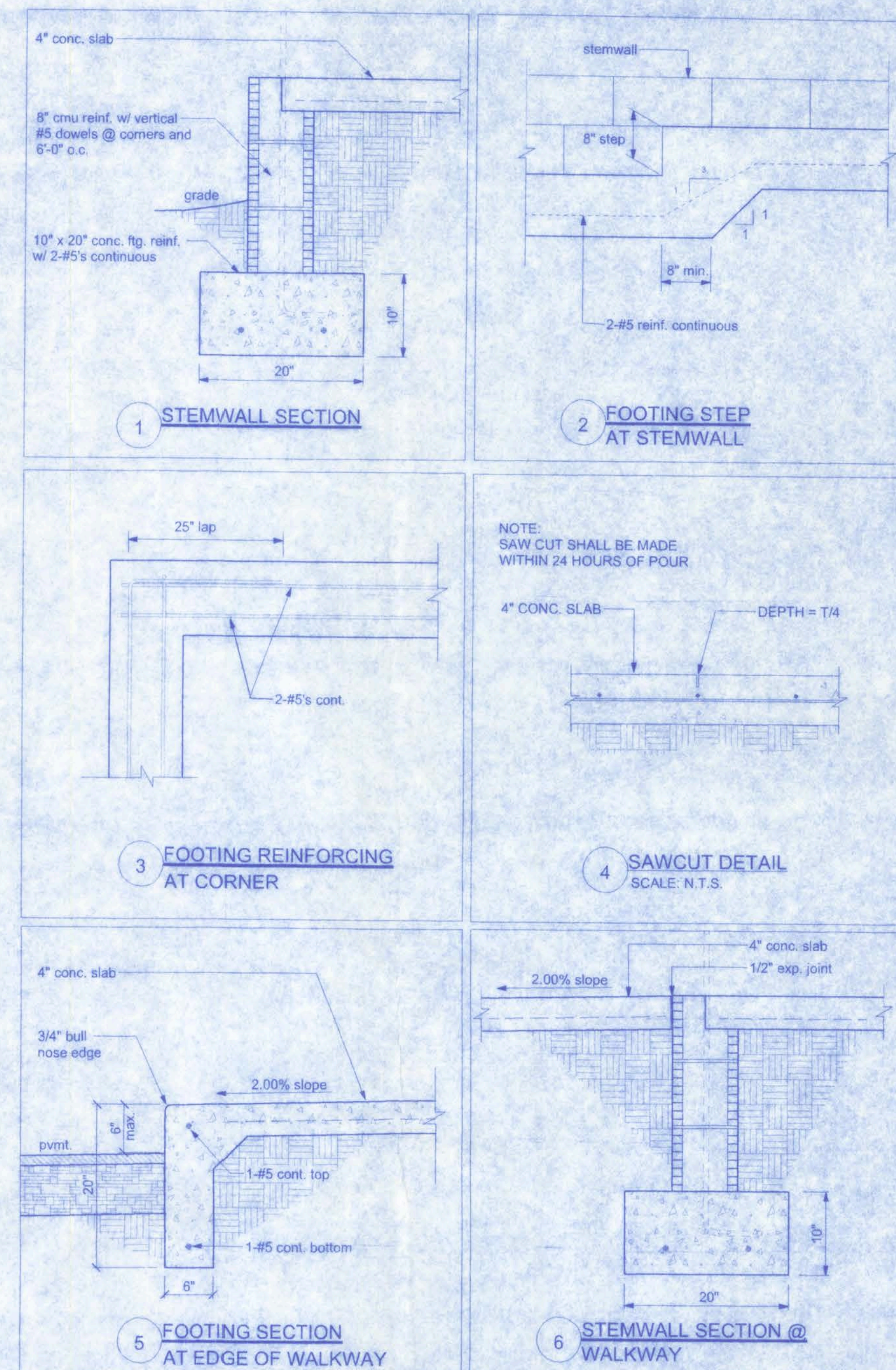
PLUMBING CONTRACTOR SHALL PREPARE "AS-BUILT" SHOP DRAWINGS INDICATING ALL PLUMBING WORK, INCLUDING ALL PLUMBING LINE LOCATIONS AND RISER DIAGRAM. CONTR SHALL PROVIDE 1 COPY OF AS-BUILT DWGS TO OWNER AND 1 COPY TO THE PERMIT ISSUING AUTHORITY.

NOTE!

ADDED FILL SHALL BE APPLIED IN 6" LIFTS. EA. LIFT SHALL BE COMPACTED TO 95% DRY COMPACTION PER THE "MODIFIED PROCTOR" METHOD.

NOTE!

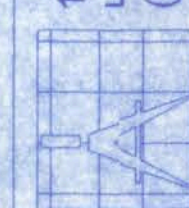
PROVIDE PLUMBING CLEAN-OUTS AT THE BASE OF ALL STACKS, A MAXIMUM OF 75' O.C. ALONG ALL MAIN DRAIN RUNS AND THE UP-STREAM ENDS OF MAIN DRAIN RUNS, WHERE THE MAIN BUILDING DRAIN EXITS THE BUILDING AND AT 75' INTERVALS TO THE DISPOSAL SITE.



1 SANITARY RISER
NTS

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32026
(386)758-4209



Freeman
Design Group

DATE: 08/24/09
DRAWN BY: W.H.F.
APPROVED: W.H.F.

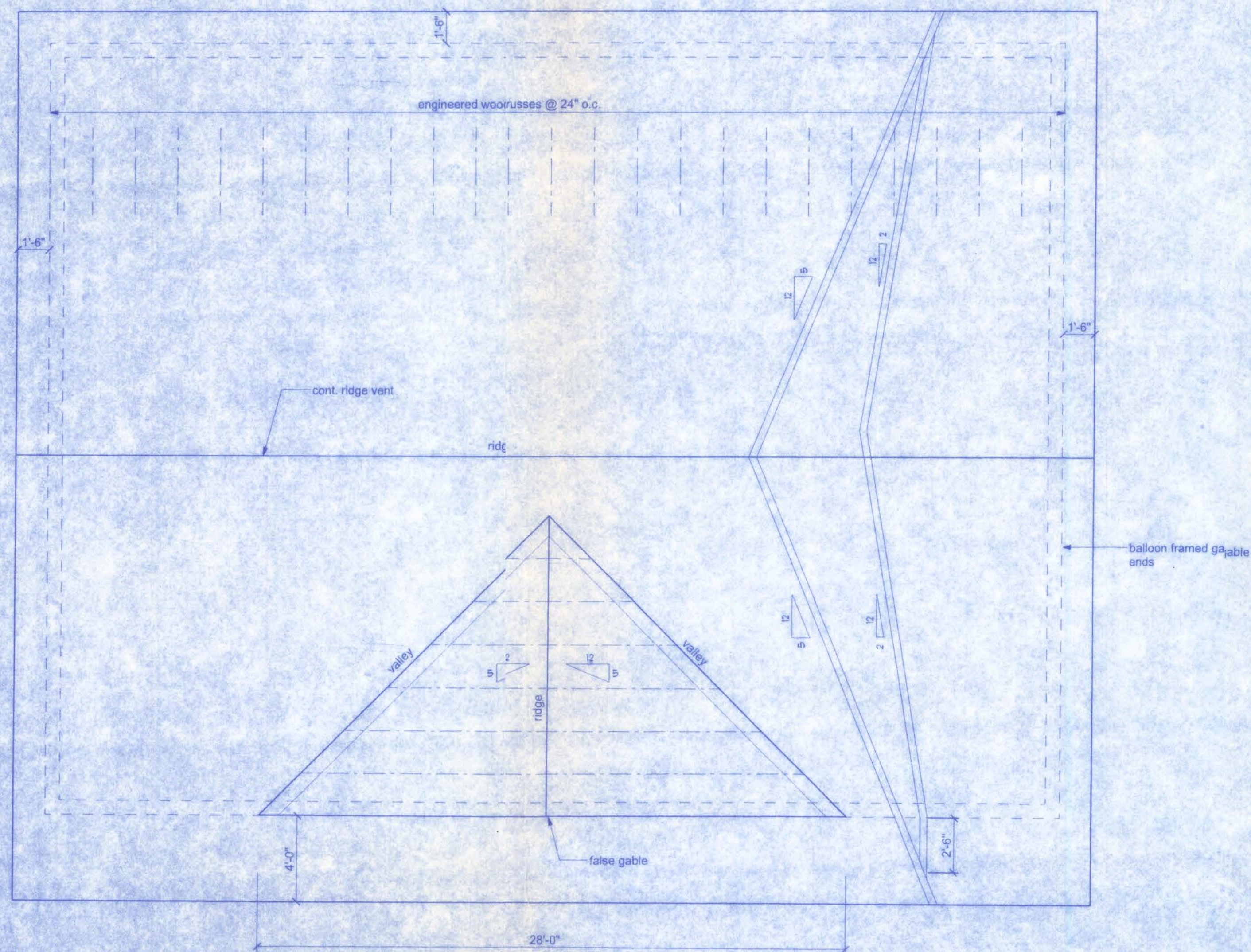
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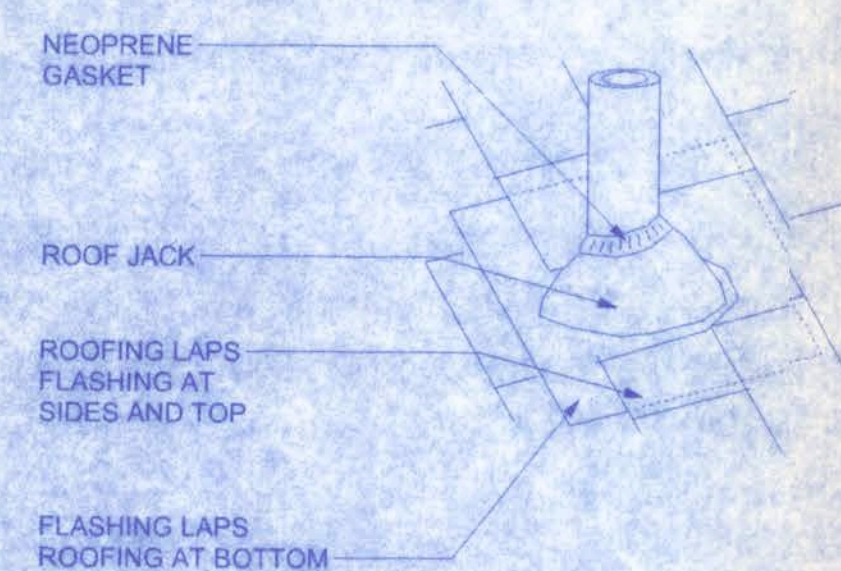
OF: 9

PROJECT NO.: 98.C020

CERTIFICATE OF AUTHORIZATION # 00008701

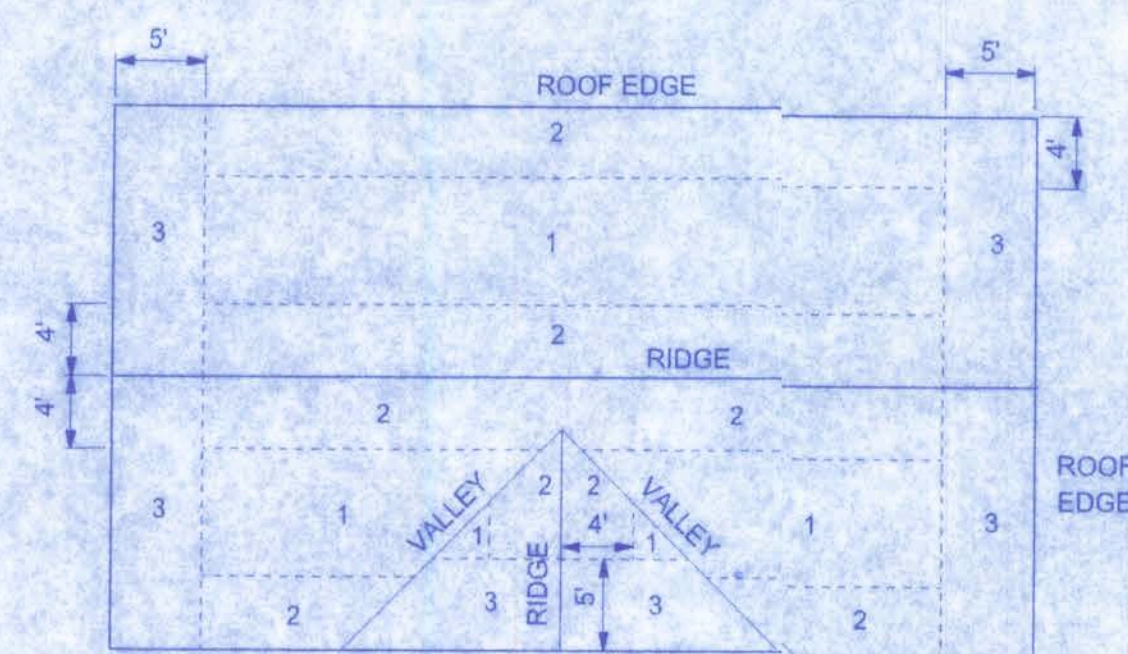


ROOF PLAN
SCALE: 1/4" = 1'-0"

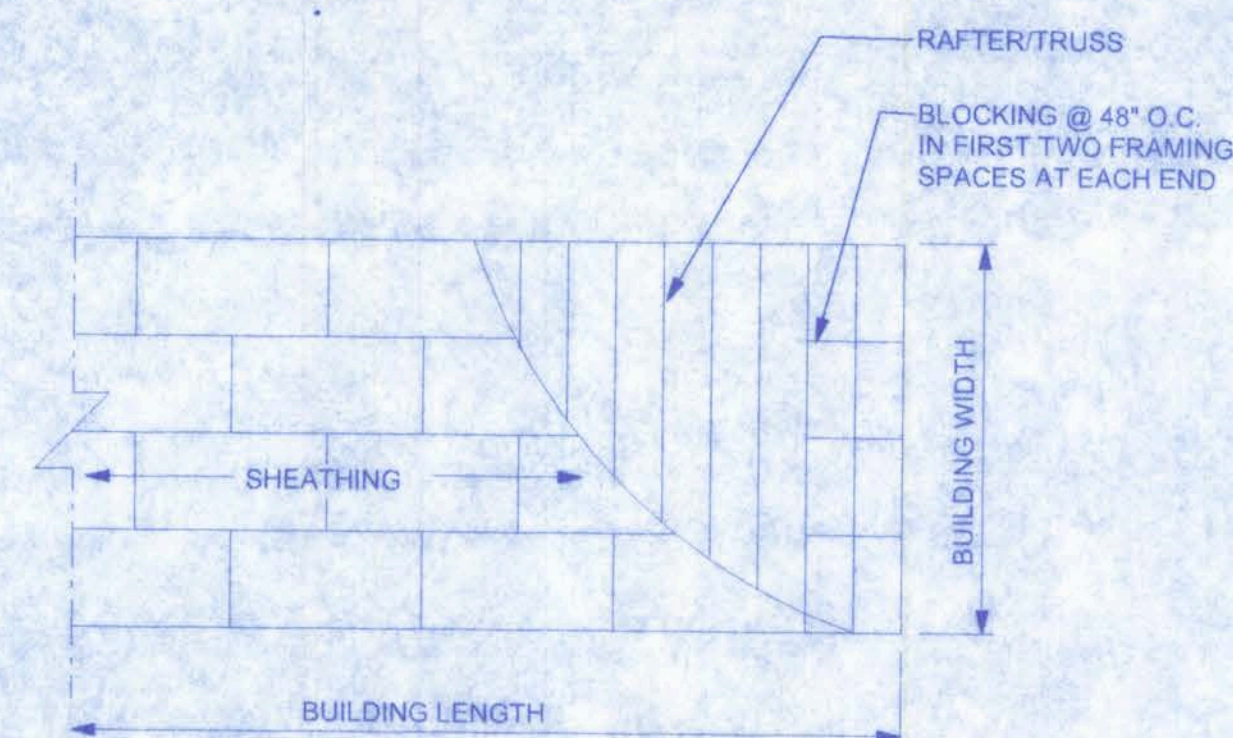


ROOF JACKS AND VENTS

ROOF SHEATHING FASTENINGS			
NAILING ZONE	SHEATHING TYPE	FASTENER	SPACING
1	1/2" O.S.B.	8d COMMON OR 8d HOT DIPPED GALVANIZED BOX NAILS	6 in. o.c. EDGE 12 in. o.c. FIELD
2			6 in. o.c. EDGE 6 in. o.c. FIELD
3			4 1/2 in. o.c. @ GABLE ENDWALL OR GABLE TRUSS 6 in. o.c. EDGE 6 in. o.c. FIELD



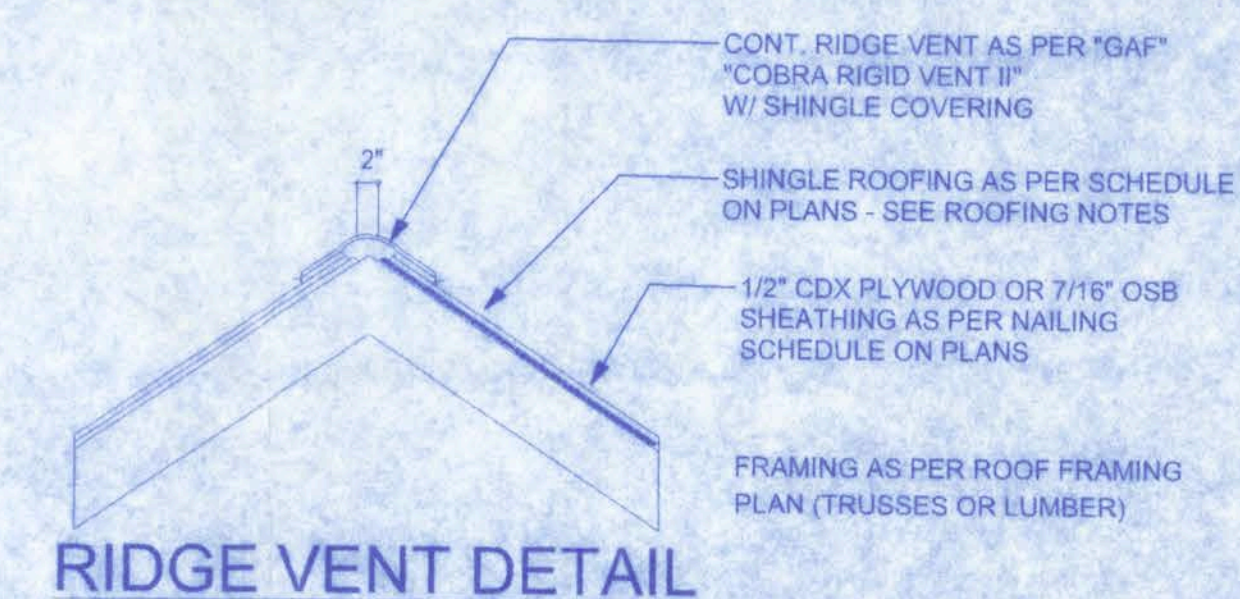
ROOF SHEATHING NAILING ZONES (GABLE ROOF)



ROOF SHEATHING LAYOUT AND ENDWALL ROOF BRACING

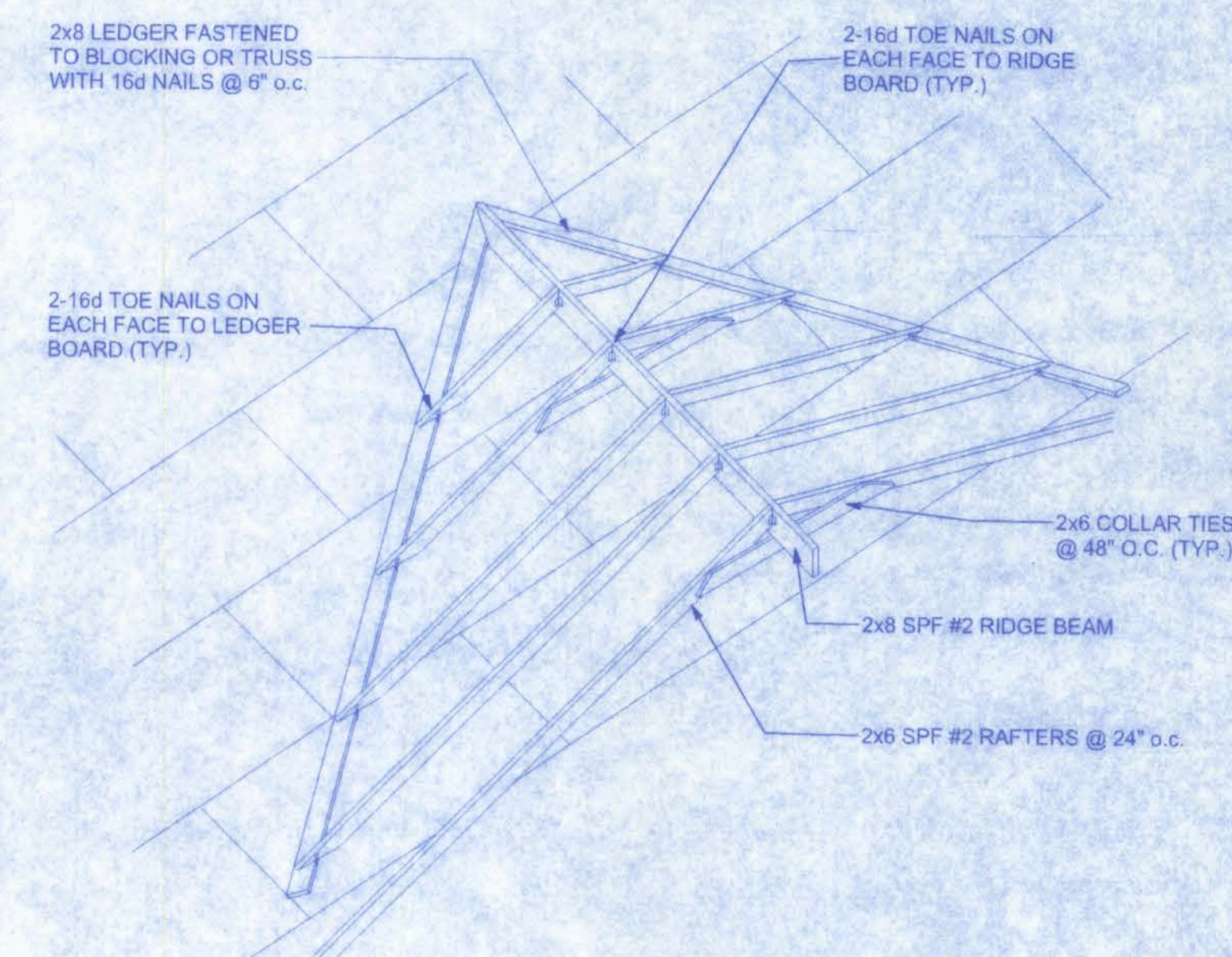
VENTILATION REQUIREMENTS

Total Attic Square Footage	Recommended Length of Cobra Rigid Vent II (Feet)	Minimum Intake Ventilation (Net Free Area in Sq. In.)
1600	21	384
1900	25	456
2200	29	528
2500	33	600
2800	41	744
3100	41	820
3400	45	816



ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS

STRUCTURAL MEMBER	ALLOWABLE DEFLECTION
rafters having slopes greater than 2/12 with no finished ceiling attached to rafters	L/180
interior walls and partitions	H/180
floors and plastered ceilings	L/360
all other structural members	L/240
exterior walls with plaster or stucco finish	H/360
exterior walls - wind loads with brittle finishes	L/240
exterior walls - wind loads with flexible finishes	L/120



ROOF INTERSECTION CONNECTION DETAIL
NTS

W. H. H. H.
7/6/09
P.E. # 55002

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32025
(386) 758-4209



Freeman
Design Group

CERTIFICATE OF AUTHORIZATION # 0000701

DATE: 06/24/09
DRAWN BY: W.H.H.
APPROVED: W.H.H.

REVISIONS

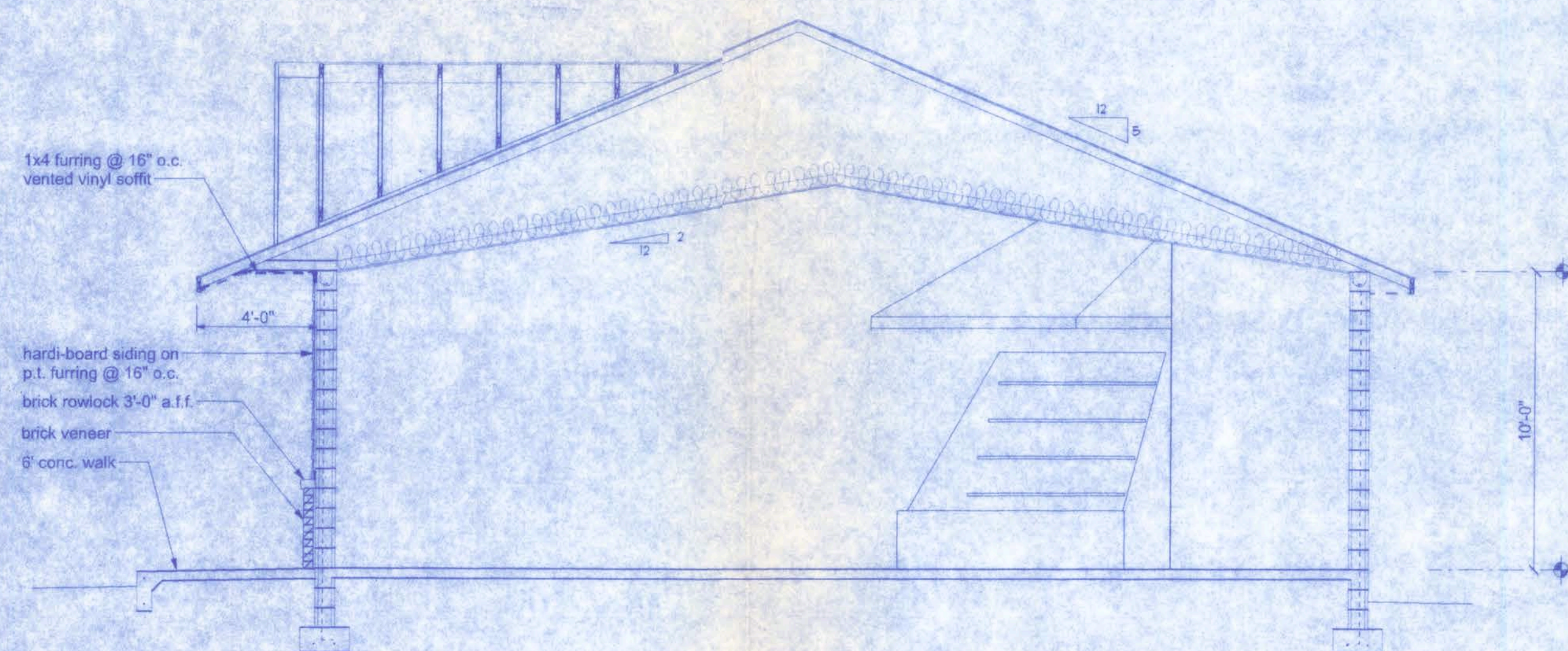
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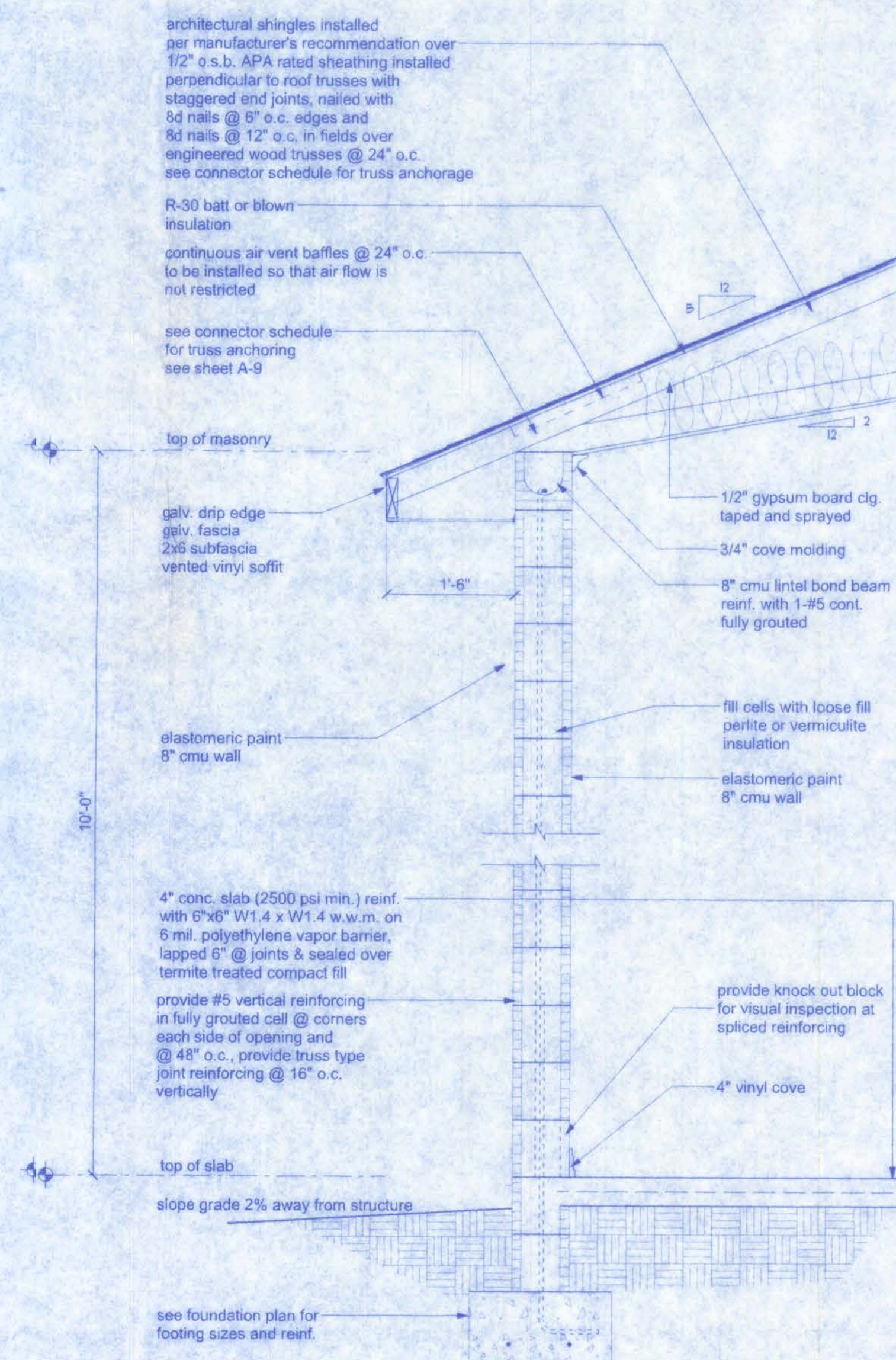
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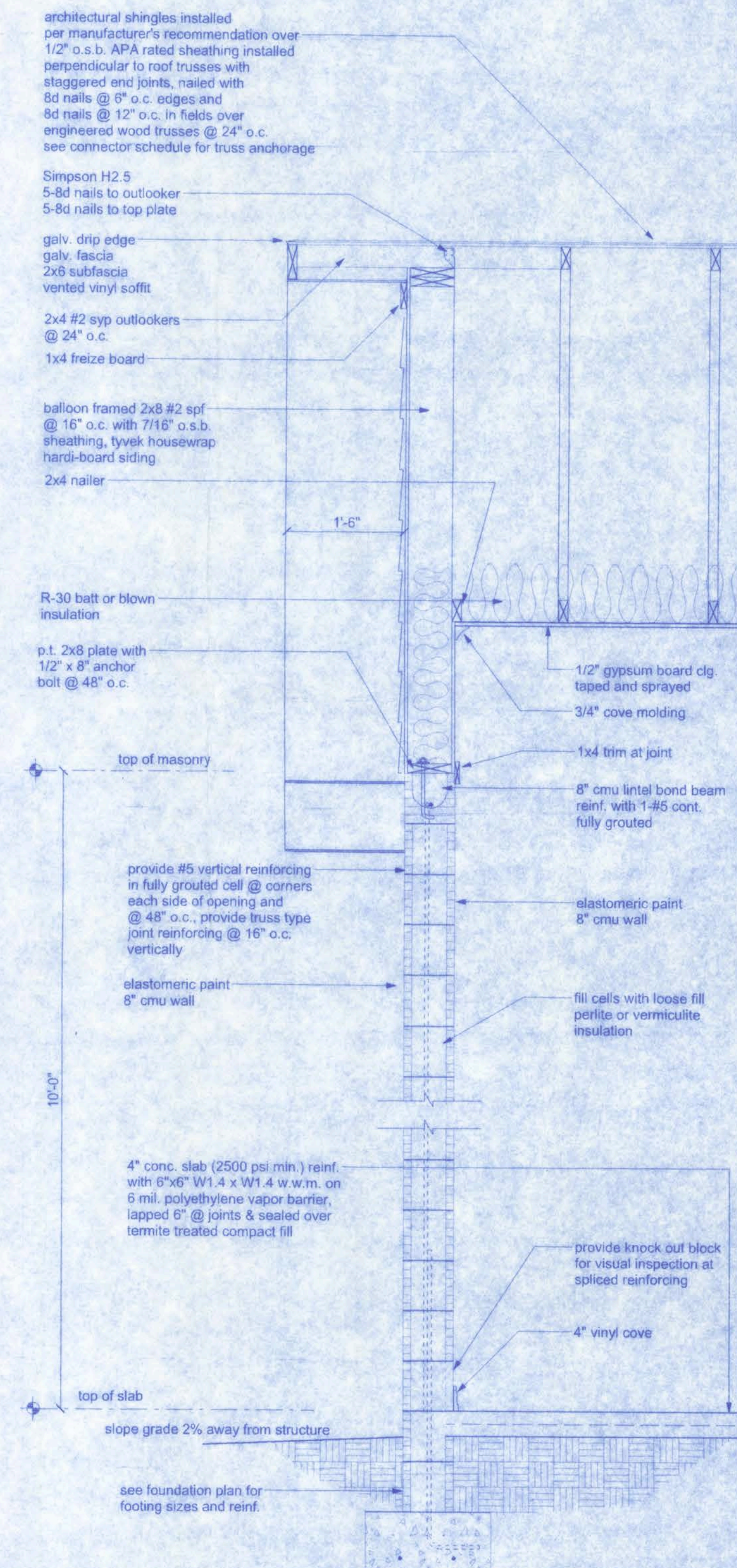
SECTION A
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SECTION I
SCALE: 1/4" = 1'-0"



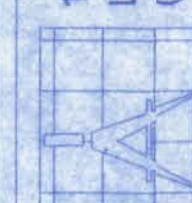
HIP SECTION
SCALE: 3/4" = 1'-0"



GABLE SECTION
SCALE: 3/4" = 1'-0"

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32025
(407) 556-4209



Freeman
Design Group

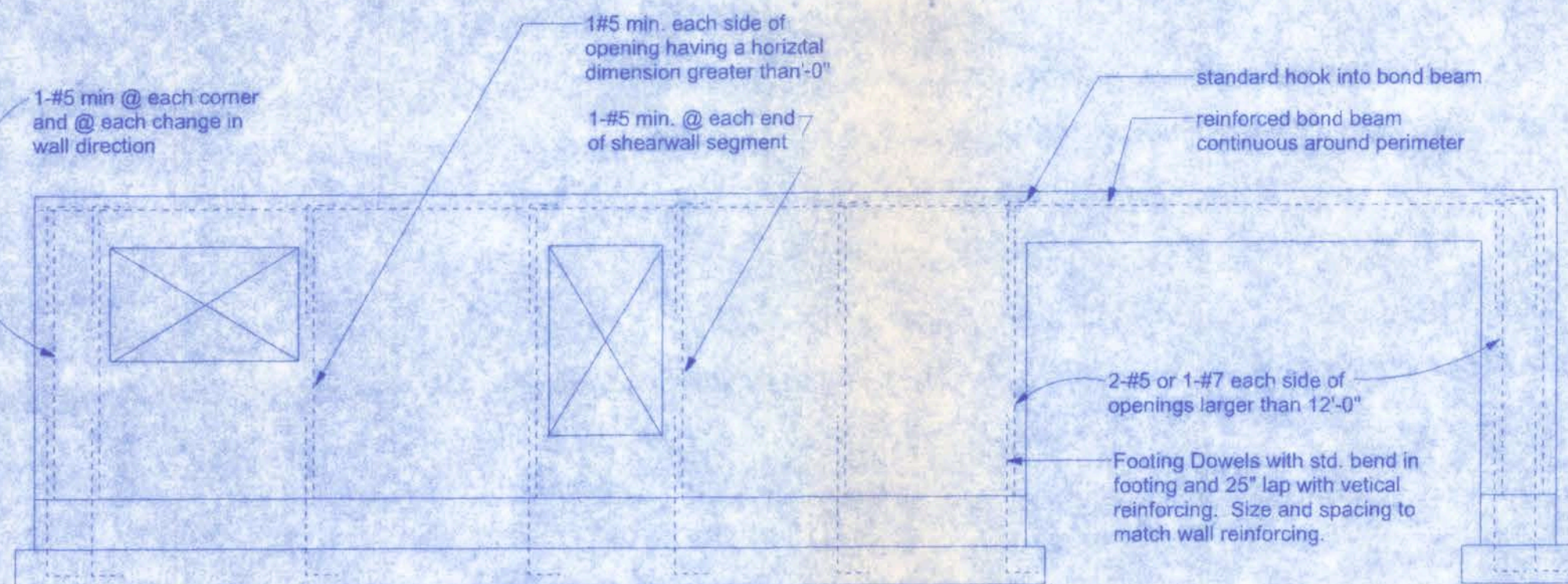
CERTIFICATE OF AUTHORIZATION # 00000701

DATE 05/24/09
DRAWN BY W.H.F.
APPROVED W.H.F.

REVISIONS

SHEET A-8
OF 9

PROJECT NO. 09020

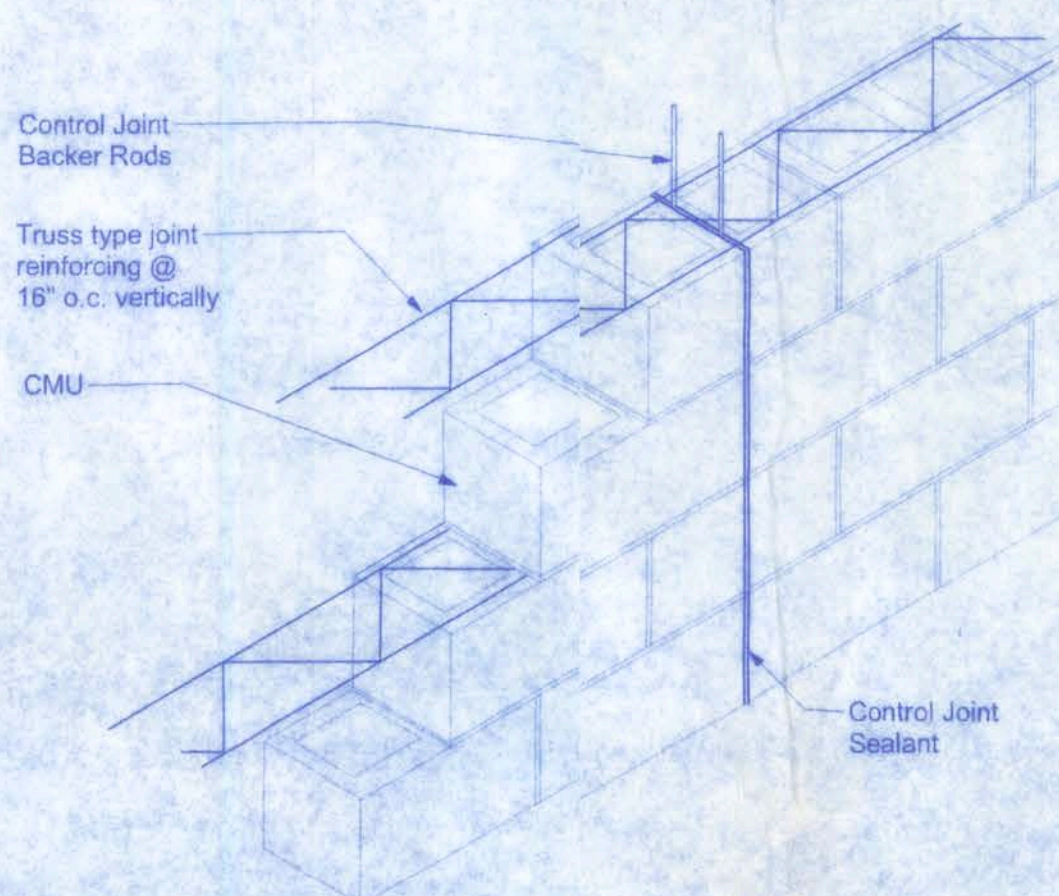
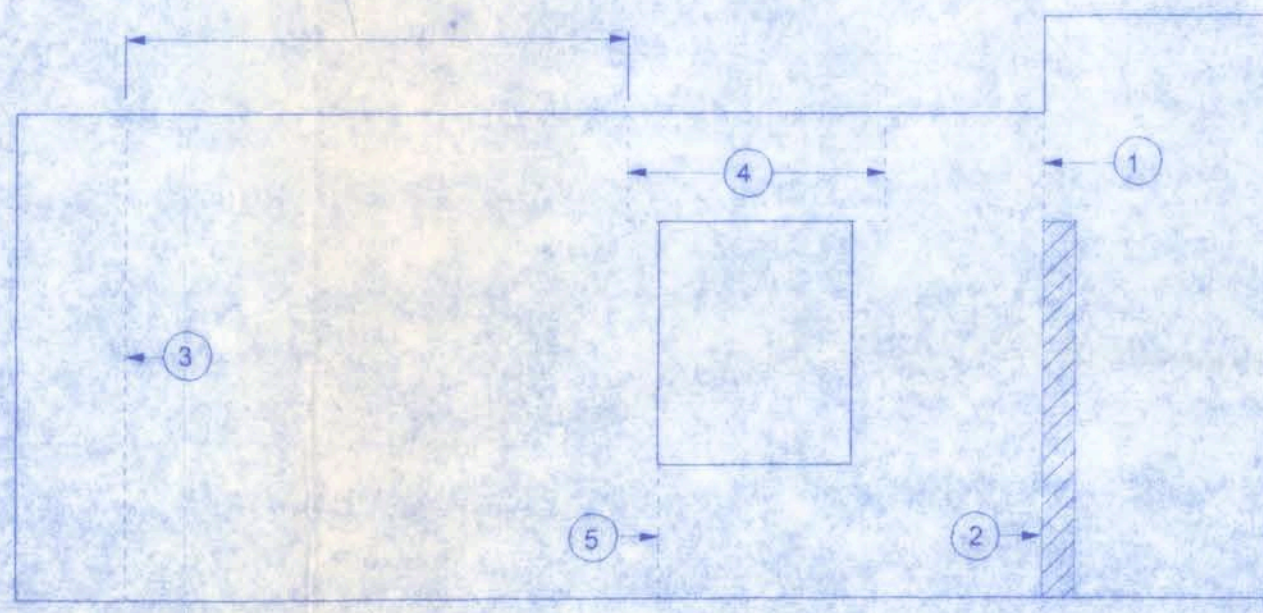


EXTERIOR WALL REINFORCEMENT SUMMARY ONE STORY (TWO STORY SIMILAR)

NTS

Control joints should be spaced every 100' to 125' along unbroken wall lengths and:

- At changes in wall height or thickness
- At columns, pilasters, and wall intersections
- Near corners
- On both sides of openings > 6'
- On one side of openings < 6'



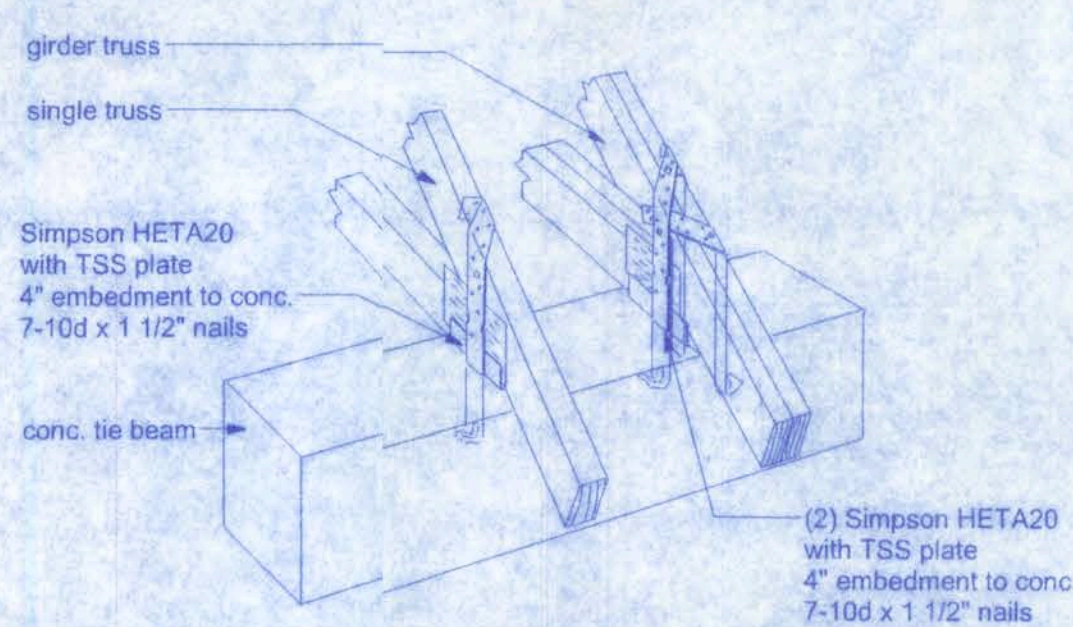
CONTROL JOINT LOCATION

NTS

STEEL COATING RECOMMENDATIONS IN PRESSURE TREATED WOOD:

- Thicker galvanizing generally extends service life of a product. The treated wood industry recommends use of Stainless Steel and hot-dip galvanized connectors and fasteners with treated wood.
- Due to the uncertainties, which are out of the specifier's control, in regard to the chemicals used in pressure treated wood, Simpson recommends the use of stainless steel fasteners, anchors and connectors with treated wood where possible. At a minimum, customers should use ZMAX (G165 HDG per ASTM A653), BatchHot Hot-Dip Galvanized (per STM A123 for connectors and ASTM A153 for fasteners), or mechanically galvanized fasteners (per ASTM B695, Class 55 or better), product with the newer alternative treated woods.
- G60 galvanized products should not be used with treated woods.
- G90 galvanized connectors can be used with Sodium Borate (DOT - Disodium Octaborate Tetrahydrate) treated woods. Sodium Borate Treated woods are not suitable for applications where moisture exposure is likely. They are suitable for mudsill applications when transported, stored, and installed appropriately.
- When using stainless steel or hot-dip galvanized connectors, the connectors and fasteners should be made of the same material.

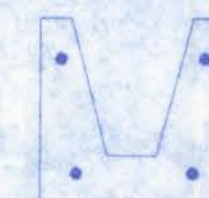
Simpson Strong-Tie Product Finishes	Untreated Wood	Chromated Copper Arsenate (CCA-C)	DOT Sodium Borate (SBX)	Alkaline Copper Quat ACQ-C and ACQ-D (Carbonate)	Copper Azole (CBA-A and CA-E)	SBX (DOT) with NASIO	Ammoniacal Copper Zinc Arsenate (ACZA)	Other Pressure Treated Woods
Standard (G90)	X	X	X					
ZMAX (G165)	X	X	X	X	X	X		
Post Hot-Dip Galvanized (HDG)	X	X	X	X	X	X	X	X
SST300 (Stainless Steel)	X	X	X	X	X	X	X	X



SIMPSON HETA20 w/ TSS

CONNECTOR SCHEDULE FOR TRUSS ANCHORAGE					
CONNECTOR	1 PLY-TRUSS	2 PLY-TRUSS	EMBEDMENT	UPLIFT PROVIDED	MANUFACTURER
HETA20	10-10d NAILS		4"	1,280 LBS	SIMPSON
HETA20		11-16d NAILS	4"	1,890 LBS	SIMPSON
GIRDER TRUSS		TIE BEAM			
MGT	22-10d 1/2" NAILS		1-5/8"x10" ANCHOR BOLT	3,965 LBS	SIMPSON
LGT2	16-16d SINKER		7- 1/4 x 2 1/4 TITEN	2,150 LBS	SIMPSON

NOTE: COMBINE BOTH THE SIMPSON MGT AND LGT2 ON TRUSSES WITH HIGHER UPLIFT



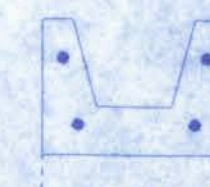
Lintel Concrete Strength = 4000 psi
Fill Concrete Strength = 3000 psi
Steel Strength = Grade 60 (#6), Grade 40 (#2 - #5)

TYPE	TOP BARS	BOTTOM BARS
A	NONE	2-#3
B	2-#2	2-#4
C	2-#3	2-#4
D	2-#3	2-#5
E	2-#4	2-#6

PRECAST LINTEL OVER OPENINGS

LENGTH	CLEAR SPAN	TYPE	FILLED + BEAM
4'-6"	3'-2"	A	6000+ PLF
7'-6"	6'-2"	B	5663 PLF
12'-0"	10'-8"	D	2181 PLF
17'-4"	16'-0"	E	1366 PLF

FILLED + BEAM = Acting as composite beam with an 8" perimeter beam
1-#5 rebar in lintel, 1-#5 rebar in perimeter beam



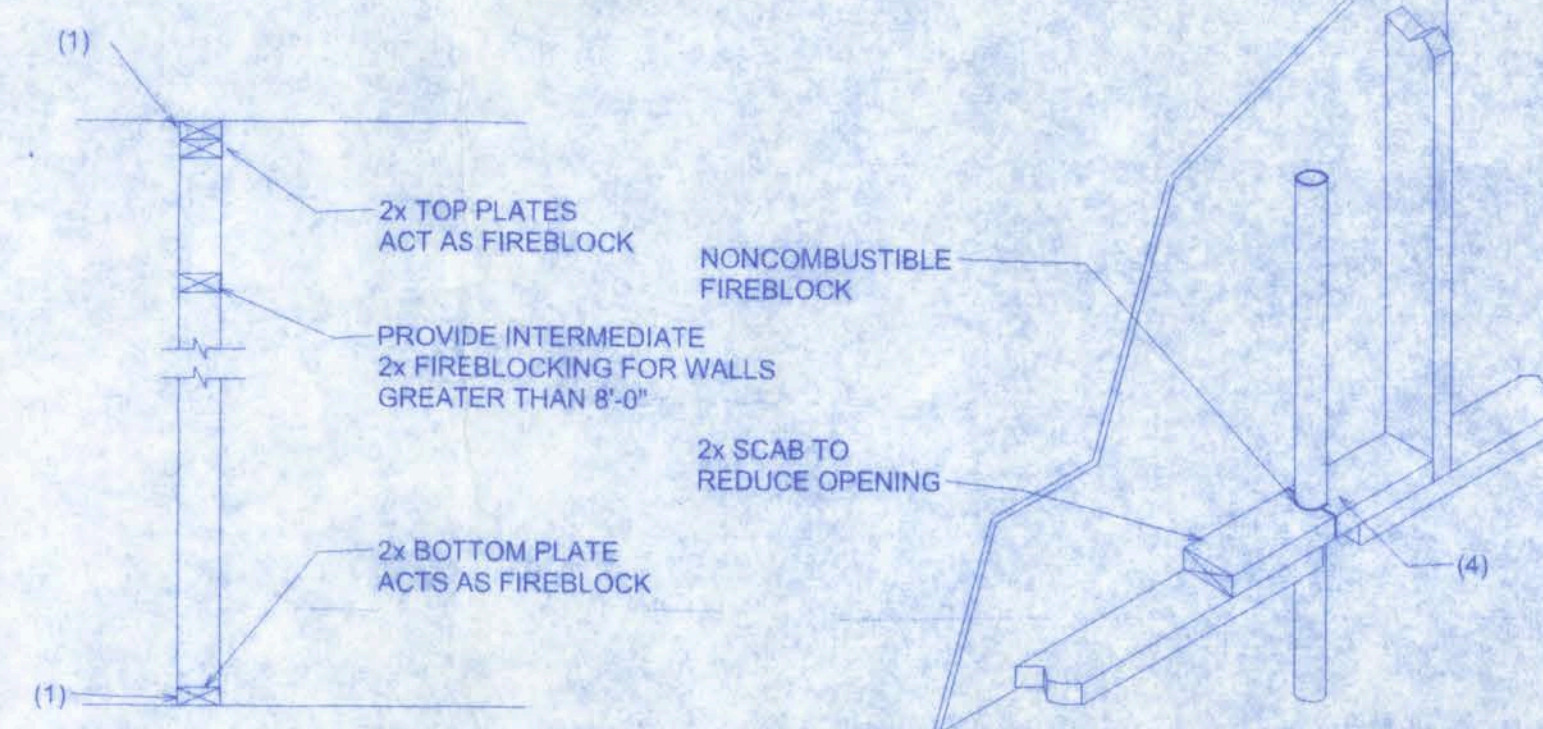
Lintel Concrete Strength = 4000 psi
Fill Concrete Strength = 3000 psi
Steel Strength = Grade 60 (#6), Grade 40 (#2 - #5)

TYPE	TOP BARS	BOTTOM BARS
A	NONE	2-#3
B	NONE	2-#4
C	2-#2	2-#4

DOORWAY HEADER

DOOR SIZE	TYPE	FILLED + BEAM
3'-0"	A	6000+ PLF
5'-0"	B	5689 PLF
6'-0"	C	4262 PLF

FILLED + BEAM = Acting as composite beam with an 8" perimeter beam
1-#5 rebar in lintel, 1-#5 rebar in perimeter beam



PLATFORM FRAMING

PENETRATIONS

FIREBLOCKING NOTES:

FIREBLOCKING SHALL BE INSTALLED IN WOOD FRAME CONSTRUCTION IN THE FOLLOWING LOCATIONS:

- IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS INCLUDING FURRED SPACES AT CEILING AND FLOOR LEVELS.
- AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS, COVE CEILINGS, ETC.
- IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN.
- AT OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS AND FIREPLACES AT CEILING AND FLOOR LEVELS WITH PYROPANEL MULTIFLEX SEALANT
- AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL STUD WALL OR PARTITION SPACES AND CONCEALED SPACES CREATED BY AN ASSEMBLY OF FLOOR JOISTS. FIREBLOCKING SHALL BE PROVIDED FOR THE FULL DEPTH OF THE JOISTS AT THE ENDS AND OVER THE SUPPORTS.

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32025
(386) 754-1010



Freeman
Design Group Inc.

DATE: 05/24/09
DRAWN BY: W.H.F.
APPROVED: W.H.F.

REVISIONS

SHEET: A-9

OF: 9

PROJECT NO.: 09-0120

CERTIFICATE OF AUTHORIZATION # 0008701

HVAC SPECIFICATIONS

1. It is the intent of these specifications to define the work and materials typically installed by a Mechanical Contractor. However, it is not intended to define a subcontract between the Mechanical Contractor and the General Contractor. The General Contractor is responsible for the entire project and any questions regarding scope of work shall be directed to the General Contractor.
 2. Work shall include all labor, materials, fixtures, equipment, tools and service necessary for installation, testing and adjusting of all mechanical systems shall be furnished and installed in compliance with the Drawings, Specifications, and any Addenda thereto.
 3. Drawings and Specifications shall be understood to cover, according to their intent and meaning, complete mechanical systems. Work shown and not specified, or work specified and not shown shall be performed as though mentioned in both.
 4. Minor items and accessories reasonably inferred as necessary for the complete and proper operation of any system shall be provided by contractor or subcontractor for such system whether or not they are specifically called for.
 5. Before submitting a bid, the Mechanical Contractor is to coordinate with the General Contractor to ascertain, in detail, the division of work, and the extent of performance other subs and the General Contractor.
 6. All work shall be performed or installed in strict accordance with Standard Mechanical Codes and all applicable rules, regulations and codes of both state and Federal Governments having lawful jurisdiction, and each contractor and subcontractor shall be responsible for such compliance.
 7. Fees for permits, inspections, patent use, royalties, etc. shall be paid by the contractor.
 8. All systems shall be tested for proper operation, rotation air supply, water supply, pressures, flows, balance, vibration, and appropriate interlocks as required by these specifications or manufacturers' recommendations.
 9. All work shall be installed in accordance with the appropriate codes and satisfy the local inspector having jurisdiction.
 10. Upon completion of each part of the mechanical system, the contractor shall demonstrate to the Engineer that each item on that system is installed with proper covers, safeties, controls, etc., and that all are in proper working order.
 11. A set of "red-lined" mechanical drawings shall be carefully maintained at the job site. Actual conditions are to be put on the drawings in red on a daily basis so the drawings will continuously show locations and routings of piping, ducts, grilles, equipment, valves, and any equipment specified on the drawings or in these specifications.
 12. Equipment and materials shall be new and meet or exceed specification requirements.
 13. All products shall be current model for which replacement parts are available.
 14. M. Acceptable manufacturers are listed, additional manufacturers may request approval for their products up to 10 days in advance of bid. Engineer may require supplemental information prior to accepting or rejecting the alternate.
 15. N. All work shall be performed in compliance with OSHA regulations.
 16. O. Shop drawings and product data shall be submitted on all equipment, fixtures, etc.
 17. Submittals shall include all equipment to be installed by the subcontractor and all submittals must be made at same time.
 18. Each package must have the General Contractors review stamp prior to submittal.
 19. The Engineer will review one submittal and one resubmittal; subsequent resubmittals may require a review charge to be paid by subcontractor.
 20. Shop drawings shall be labeled in the same designation as the drawings.
 21. P. Job conditions shall be determined prior to bidding in the following manner:
 1. Site visit to determine:
 - a. Existing conditions.
 - b. How and where materials will be delivered and stored.
 - c. Special problems encountered during construction.
 2. Examine all Contract Drawings and Specifications to determine:
 - a. Type of construction to be used.
 - b. How construction or work will affect the work of this Section.
 - c. Nature and extent of work of other trades.
 3. Failure to determine existing conditions or nature of construction will not be considered as a basis for granting additional compensation.
 22. R. Installation:
 1. Contract Drawings show the arrangements and sizes of principal apparatus and devices to be provided under this Contract and connection thereto. These shall be followed as closely as actual building construction will permit.
 2. Dimensions of work as indicated on Plans are not guaranteed to be as-built dimensions.
 3. No measurements shall be scaled from Drawings and used as definite dimensions for layout or fitting work in place.
 4. Layout of equipment, as shown on the plans, shall be checked and exact location determined by dimension if equipment approved by the Architect.
 5. Consult the Drawings for all dimensions, locations of partitions, sizes of structural member, foundations, etc.
 6. Do not make final layouts until shop or equipment drawings are approved and job conditions verified.
 23. Mechanical reference symbols are given on the mechanical legend on the drawings.
 24. S. Rough-in:
 1. Work included:
 - a. Contractor shall rough-in for all equipment, fixtures, etc., in building whether or not such equipment is furnished by this Contractor or by Owner.
 2. Method:
 - a. Determine in advance the location and size of all openings and chases necessary for proper installation of all work and have openings and chases provided during construction.
 - b. Install all inserts for hangers and supports of mechanical work and equipment work as general construction progresses.
 - c. Rough-in openings in masonry or stud walls shall be cut, not broken or chiseled.
 - d. Sleeves shall be required at all points where piping passes through concrete walls, slabs or masonry walls; sleeves installed below grade or where subject to high water conditions shall be installed watertight.
 3. Coordination:
 - a. Work shall be coordinated between all Contractors, Subcontractors, Installers, Suppliers, Trades, etc., to:
 - i. Insure a neatly fitted installation.
 - ii. Determine the nature and extent of the work of others.
 - iii. Eliminate interferences.
 - b. Maintain maximum headroom and clearances.
 - c. Any interference which develops or is foreseen and cannot be resolved by the affected trades, etc., shall be handled as follows:
 - i. Cease installation of that portion of the work which is in conflict as no additional compensation will be allowed for any relocation, etc.
 - ii. Continue work only on other portions of the work which are not in conflict.
 - d. Notify the Architect immediately.
 - e. Architect's decision shall be final as to any relocation, rerouting, removal, etc.
 - f. No additional compensation will be allowed for removal, relocation, repairs or changes required by interferences.
 4. Clear away all debris, surplus materials, etc., resulting from work on operations, leaving job and equipment in clean first-class condition.
 5. V. Clean all rotating equipment, ducts, piping, etc., and leave them in a ready-to-use condition.
 6. W. Where factory finish is provided on equipment, all marred or damaged surfaces shall be touched-up or refinished hereunder as approved.
 7. X. Thoroughly clean all items of equipment, leaving them in first-class condition.
 8. Y. Wipe clean or wash if necessary air surfaces of all coils, fan housings, fan wheels, fan motors, air unit plenums, and all air filters.
 9. Z. All pumps, motors, fans and other rotating equipment shall be stored at Site with openings, bearing, etc., covered to exclude dust and moisture; all stockpiled conduit shall be placed on damage, and protected from weather, from entry of foreign materials.
25. BALANCING OF AIR SYSTEMS
 - A. Balance and adjust each air distribution system shown on the Drawings.
 - B. Perform work in accordance with procedures and standards described in SMACNA Balancing and Adjustment Manual.
 - C. Balancing shall be done by a certified balancing firm independent of the Mechanical Contractor.
 - D. Reports shall be made on SMACNA forms.
 - E. Submit five (5) copies for approval and record.
 - F. Examine HVAC units to see that they are free from obstructions.
 - G. Open all dampers and grilles.
 - H. Check lubrication of all moving equipment.
 - I. Check for proper installation of filters.
 - J. Perform other inspection and maintenance activities necessary for proper operation of systems.
 - K. Fuse sizes and thermal overload heaters shall be checked against each motor nameplate.
 - L. The amperage shall be read at each electrical motor to determine the load imposed on it.

Adjustment and Balance

1. Adjust variable type pulleys, volume dampers, control dampers, etc. to provide correct volumes to main trunk lines.
2. Check and adjust outside air quantities as required.
3. Adjust air extractors and manual balancing dampers to supply correct air volume to each main branch duct from main trunk lines.
4. Adjust manual balancing dampers to supply correct volume to each individual branch duct.
5. Use terminal registers only for minimal adjustment of air flows, i.e. less than 5% of air volume.
6. Adjust grilles and diffusers for proper air flow patterns.
7. Air conditioning units shall be placed in operation and both wet and dry bulb temperature taken at one-hour intervals to determine the amount of cooling being accomplished and to indicate adjustments needed.
8. After spaces have been brought down to design temperatures and equipment is unloading properly, air shall be rebalanced if necessary by means of calibrated thermometers placed in each room and in open spaces not over 20' apart. There shall be no deviation in temperature of more than 3 F. throughout the space cooled.
9. A thorough check shall be made, with an anemometer, of air motion in the occupied space. Any air motion exceeding 50 fpm shall be remedied.

OPPER PIPE

1. Refrigerant:
 - a. ACR Copper
2. All refrigerant pipe and fittings having an external or internal working pressure greater than 15 psig shall comply with ANSI Code for Pressure Piping where applicable.
3. Joints:
 - a. Solder using Silver solder or "Sil-Fos."
 - b. Compression fittings may be used at equipment connections.
4. Fittings:
 - a. Wrought copper
 - b. Approved compression type brass.

LASTIC PIPE AND FITTINGS

1. Air Conditioning condensate drains:
 - a. PVC - ASTM D-1784-60T
 - b. Schedule 40
 - c. Type 1, Grade 1.
2. Joints:
 - a. Bonded joints using adhesive per manufacturer's recommendations
 - b. Fittings - PVC - ASTM D-2665-69

SPLIT SYSTEM HEAT PUMPS CU-1, CU-2

1. Split System heating and cooling units with reverse cycle, heat strip, & electric reheat coil where specified.
2. Acceptable Manufacturers:
 - a. CARRIER
 - b. TRANE
3. Approved equal:
 - a. Supply Unit: AH-1, AH-2
 - b. Airflow as indicated on drawings.
4. Fan shall be direct - drive, forward-curved, double inlet, statically and dynamically balanced, belt drive, plenum type, statically, and dynamically balanced.
5. Fan motor shall be resiliently mounted and shall be easily removable for service.
6. Fan motor shall be permanent - split-capacitor type with integral overload protection, "high" efficiency, Florida Energy Code Minimum.
7. Cooling coil and reheat coil shall have aluminum fins mechanically bonded to copper tubing. Coil shall have factory installed refrigerant metering devices.

Outdoor Unit - CU-1, CU-2

1. Outdoor unit shall be designed for use with Refrigerant 22 and contain sufficient charges (R22) for complete system. Brass service valves with refrigerant line fittings and service ports shall be located on exterior of unit.
2. Outdoor coil shall be constructed with aluminum fins mechanically bonded to copper tubing. Factory installed coil refrigerant metering device shall be mounted on unit liquid service valve. Metering device internal components shall be removable or cleaning or replacement.
3. Outdoor unit fan shall be propeller type, direct driven, and arranged for vertical air discharge. Fan motor shall be factory lubricated, inherently protected and resiliently mounted.
4. Compressor shall be of the welded-hermetic type with internal vibration isolation and shall be covered with a shield to muffle operating sound. Compressor motor shall have both thermal and current sensitive overload device. Compressor shall be equipped with a crank-case heater and have internal high-pressure protection.
5. Controls shall be factory wired and located in a readily accessible location. Controls and protective devices shall include a liquid line low pressure switch, suction line accumulator and pressure relief device. Control wiring terminal board shall be designed to match indoor unit terminal board and accessory thermostat terminals for standardized point-to-point connection.
6. Resistance Heater:
 - a. Heaters shall be wired for the number of stages of operation indicated on the Drawings.
 - b. Heaters shall be equippt with thermal and current overload devices as required by applicable codes.
7. Refer to Mechanical Equipment Schedule for Model Numbers.

EXHAUST FANS

1. All exhaust fans mounted in the ceiling inside to building and ducted to the outside.
2. Meet the specification for air delivery at static pressure as specified on the Equipment Schedule.
3. Meet the noise criteria (if specified on Schedule).
4. Be of the manufacture and model number specified on the Equipment Schedule or equal.
5. Eliminate interferences.
6. Acceptable Manufacturers:
 - a. Penn Ventilator
 - b. Zarnes
 - c. Greenheck
7. General:
 - a. Acoustically insulated steel housing
 - b. Baked enamel finish on housing
 - c. Adjustable mounting brackets
 - d. Automatic backdraft damper at the discharge duct
 - e. Lifetime lubricated motor
 - f. Terminal box on housing with cord, plug and captive inside the housing
 - g. Fan motor and wheel shall be removable without moving entire fan housing.

PWER ROOF VENTILATORS - NOT USED

1. All powered roof-mounted exhaust fans which are connected to spaces within the building by ductwork.
2. General:
 - a. Ventilators shall meet the Specifications listed on the Mechanical Equipment Schedule.
 - b. Ventilators shall be installed where shown on the drawings and properly flashed according to details on the drawings.
3. Acceptable Manufacturers:
 - a. Penn Ventilator
 - b. Zarnes
 - c. Greenheck
4. General:
 - a. Heavy gauge spun aluminum
 - b. Motor cover easily removable
 - c. Shaded pole motor-variable speed
 - d. Gravity backdraft dampers
 - e. Greenclean
 - f. Disconnect built into unit
 - g. Remotely controlled
 - h. Direct drive or belt drive as required for capacity indicated or as shown on Schedule.
 - i. Model Number Refer to "Exhaust Fan Schedule."

DUCTWORK

1. All Supply Ductwork shall be low pressure fiberglass ductboard or sheetmetal ductwork.
2. External insulation shall be installed on all sheet metal duct, 2" fiberglass duct wrap.
3. Supply and return ductwork fiberglass ductboard. Provide 2" duct wrap on exterior sheet metal ducts and 1" rigid board insulation on the interior of sheet metal duct and painted to match walls.
4. All general exhaust ductwork shall be low pressure sheet metal.
5. Insulation not required.
6. Raw Outdoor air ductwork in shall be low-pressure metal.
7. Insulation not required.
8. LOW - PRESSURE SHEETMETAL DUCTWORK
 - a. Drawings, all ductwork shall be constructed in accordance with the Sheet Metal and Air Conditioning Contractor's National Association (SMACNA).
 - b. Duct systems shall be complete, including all duct fittings, turning vanes, transverse reinforcing hangers, supports, etc., as detailed on the Drawings or in the standards.
 - c. Provide and install balancing dampers or adjustable splitters at all branch ducts, and where required for balancing the system.
 - d. Each damper shall be adjustable with an approved quadrant or regulator. Dampers to be opposite blade type for ducts over 12" in any dimension, for ducts 12" single blade is acceptable except for outdoor air intakes which shall be low-test/grade opposed blade.
 - e. Dimensions shown are net inside dimensions (including insulation).
 - f. Galvanized sheetmetal duct shall conform to the following thicknesses:

a. Largest dimension	Gauge
0-30 inches	24
31-54 inches	22
55-84 inches	20
over 84 inches	18

F. Plenums shall be constructed and tested in accordance with SMACNA STANDARDS

1. FLEXIBLE CONECTIONS
 - a. Provide between duct system and air moving equipment.
 - b. Connection shall be made with not less than 4" wide flexible collar using "Ventglas" 30-ounce neoprene coated glass fabric.
2. H. (Where construction methods for various items are not indicated on the Drawings or specified herein, all such work shall be fabricated and installed in strict accordance with the recommended methods, metal gauges, hanging procedures, access door and accessories installation, etc., as outlined, the latest edition of SMACNA's Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning System.
3. I. Insulate all ductwork generally as shown on the drawings and as required by SMACNA Manual.
4. J. Sheetmetal:
 - a. Low pressure ductwork and fittings shall be made tight for minimum air leakage.
 - b. Duct tape shall not be used to seal joints.
 - c. All ductwork, except in equipment rooms shall be concealed in construction spaces above ceilings, in attics, chases, etc.
 - d. Ducts shall be constructed to provide specified air through building without adding nozzles to the air stream by sudden contractions as sharp edges.
 - e. Ducts shall be securely fastened to the structure with hangers.
5. Connections:
 - a. Ducts shall be air tight braced and reinforced to prevent vibration and breathing.
 - b. Seal supply, return, exhaust and outside air ductwork with adhesive sealing compound.
 - c. Exterior ductwork to be housed with metal cover, galvanized or aluminum, or weather proofed using felt and AS 20 and asphalt mastic (1/2" bull).
 - d. Rectangular duct connections shall be made with pocket slip or Bars-slip not more than 8 ft. apart up to 24 in. largest dimension and not more than 4 ft. apart above 24 in. largest dimension.
6. K. Leakage:
 - a. Contractor shall make necessary repair and shall make duct system ready for a leakage test.
 - b. Test shall be performed by Test and Balance Contractor.
 - c. Leakage shall not exceed 1% leakage for high pressure duct and 5% for low pressure duct construction.

DUCT INSULATION

1. Acceptable Manufacturers:
 - a. Johns-Manville
 - b. Certainteed
 - c. Knaf
2. Duct Wrap:
 - a. 2" inch thick fiberglass
 - b. Flamespread 25 per ASTM E-84
 - c. Smoke developed 50 per ASTM E-84
 - d. Factory applied vapor barrier - heavy duty
 - e. 4 mil vinyl film, class 1, meeting NF-PA 90A and 90B; UL rated
3. Product:
 - a. Johns-Manville "Microtite"
4. Accessories:
 - a. Insulation tape, mastic, adhesives, etc., shall have the same flamespread and smoke rating as the insulation to which they are applied and meet manufacturer's recommendations.
5. Ductwrap:
 - a. Overlap seams of ductwrap, secure with 4" wide open weave glass fabric and two coats of vapor retarder mastic.
 - b. Underside of ductwork greater than 24" wide shall also be secured with mechanical fasteners with tape.
 - c. Pressure tape is not acceptable.

DUCT HANGERS AND SUPPORTS

1. All ductwork for an supply, return, fresh air or exhaust shall be supported by duct hangers, clamps, clips or supports.
2. Acceptable Manufacturers:
 - a. Duct hangers may be a manufactured item or field fabricated as required.
3. Galvanized steel straps:
 - a. Minimum 16 gauge and one inch wide
4. Trapeze hangers:
 - a. Ducts 20 inches to 40 inches largest dimension.
 - i. Minimum 1/2 inch x 1/4 inch steel angles.
 - b. Minimum 1/4 inch threaded rods
5. Ducts above 40 inches largest dimension and plenums:
 - a. Minimum 1-1/2 inch x 1-1/2 inch x 1/4 inch steel angles.
 - b. Minimum 3/8 inch threaded rods
6. Supports:
 - a. All ductwork shall be supported from structural building members, i.e., block, beams, columns, purlins, joists, etc.
 - b. Ductwork shall not be supported from ceiling tile or grids, conduit, mechanical equipment, piping or non-structural steel.
 - c. Ductwork hangers shall be attached to building steel by bolts, screws, clamps or welding.

F. Hanger Bands

1. Horizontal concealed ductwork up to 20 inches largest dimension shall be supported by one (1) inch x 16 gauge galvanized steel straps at a maximum spacing of 10 ft. and at each elbow or branch takeoff.
2. Bands and spacing shall be at a maximum spacing of 10 feet on horizontal runs and at each elbow or branch takeoff.
3. No nails shall be driven through any ductwork and into floor joists, trusses, etc.
4. Vertical ductwork, all sizes, shall be supported by bands bolted or screwed to walls, studs, etc.
5. Hanger bands shall be bent over one (1) inch from end and turned under corner of rectangular duct.
6. Duct hanger bands shall be fastened with sheet metal screws at six (6) inch intervals up sides and into bottom.
7. Sheet metal screws shall be 3/4 inch so as not to penetrate duct liner completely.
8. Trapeze Hangers:
 - a. Horizontal ductwork larger than 20 inches largest dimension and all exposed ductwork shall be supported by trapeze type hangers.
 - b. Trapeze hangers shall be at a maximum spacing of 10 feet and at each elbow or branch takeoff.
 - c. Hanger rods shall be secured to bottom bracing angles with nuts and locknuts.

DUCT ACCESSORIES

1. Air distribution system shall be furnished complete with duct accessories necessary to allow complete air balancing and adjusting of flow and volume.
2. All square duct corners and "T" connections shall be fitted with turning vanes.
3. All branch duct takeoffs shall be fitted with nonadjustable air turning vanes AND manual volume control dampers, OR adjustable volume extractors which are adjustable from outside the duct.
4. Each grille and diffuser shall be fitted with a manual volume control register at the face of the grille and adjustable from the face of the grille without requiring removal of the grille.
5. Acceptable Manufacturers:
 - a. Ruskin
 - b. Tiltus
 - c. Properly submitted approved equal
6. F. Air turning vanes:
 - a. Multiple radius vanes
 - b. Steel construction
 - c. Electrocoated white finish
 - d. Maximum pressure loss = 20% of velocity head
 - e. Model number - equal to Barber Colman Models AOOA and ADOF
7. G. Volume Extractors:
 - a. Gang operated parallel blade
 - b. Fully adjustable from wide open to full closed
 - c. Supply with supporting foot as required for branch takeoffs not in the same plane as trunk lines.

VOLUME DAMPERS

1. All return air and fresh air dampers shall be parallel blade pivot dampers with motorized control where noted.
2. All balancing dampers shall have manual control dampers with positive position locking.
3. Acceptable Manufacturers:
 - a. Prefco Manufacturing Co.
 - b. Ruskin
 - c. Tiltus
 - d. Ruskin
4. Parallel Blade Pivot Dampers:
 - a. Low leakage non-degradable
 - b. Friction free metal to metal seals incorporated into the blade and frame shapes
 - c. Galvanized steel frame, 16 gauge
 - d. Galvanized steel blades, 22 gauge with double-wrapped center and edge forming
 - e. Maximum leakage - 11 CFM per sq. ft. @ 1 inch S.P.
 - f. The static pressure loss shall not exceed 0.7" W.G. @ 2000 FPM and 50% modulation
5. Model Number:
 - a. Equal to Prefco Model 5150
6. Motorized damper shall be activated by a low voltage motor and controlled by a 4-20 MA or Q-14 VDC signal.

FIRE DAMPERS

1. Provide fire dampers at all locations shown or noted on the drawings.
2. Fire dampers shall have only thermally actuated fusible links.
3. Acceptable Manufacturers:
 - a. Prefco Manufacturing Co.
 - b. Ruskin
 - c. Tiltus
4. Dampers - mounted vertically:
 - a. Damper construction shall meet the requirements of NFPA 90A.
 - b. Type B, low profile, low pressure loss.
 - c. Blade stack shall only enter the air stream to 1/2" of the damper height.
 - d. Damper requires no extra height for duct installation, i.e., there shall be no "top cap."
 - e. Blades shall be 4-1/2 inch depth - roll formed 21 gauge galvanized steel.
 - f. Frame, E-shaped, one piece roll-formed 21 gauge galvanized steel.
 - g. Blades rotate, travel and seal on a single central frame track.
 - h. Classified 1-1/2 hour rating, UL Listed.
 - i. Fire dampers shall have thermal link.
5. Model:
 - a. Dampers shall be equal to a Prefco Low Profile B" or approved equal.
6. Dampers - mounted horizontally in ceiling:
 - a. UL Listed ceiling damper
 - b. Round or square as required
 - c. 2 hour rated
7. Single or dual blade depending on duct size
8. Model Number:
 - a. Prefco Model 5650, 5600, or 5680
9. Link:
 - a. Fusible link rated at 165 Degrees F. release temperature.
10. DUCT ACCESS PANELS AND TEST HOLES
 - a. Provide an access panel at each return air and/or fresh air damper which will allow for inspection and cleaning of dampers.
 - b. Where return and fresh air dampers are located adjacent, one access door is sufficient, providing each damper is accessible.
 - c. Provide an access panel at each fire damper for resetting and maintenance of each fire and smoke damper.
 - d. Provide test holes for measurement of air flow, on each branch duct and main trunk line or plenum.
11. Acceptable Manufacturers:
 - a. Penn Ventilator Co.
12. Access Doors:

1. Insulated hinged duct access door
2. Standard gauge galvanized steel
3. Continuous piano hinge
4. Gasketed at door frame surface and at frame to duct surface
5. Positive acting cam latch handle
6. Doors shall be of sufficient size to allow access to both sides of dampers
7. If duct width is greater than 36 inches, provide access doors on each side of duct for access to entire dampers
8. Exception:
 - a. Where access door must be installed in such a position that hinged opening is not possible, provide door that is completely removable
 - b. Removable door shall have cam-locks on both sides
9. Model Numbers:
 - a. Hinged doors shall be equal to Penn Ventilator Model DAD
 - b. Non-hinged removable door shall be equal to Penn Ventilator Model DAD-RP.
10. Test Holes:
 - a. Provide a capped access hole in each trunk line or branch duct for insertion of air-flow pilot for flow measurement.

WALL DIFFUSERS

1. Acceptable Manufacturers:
 - a. Tiltus
 - b. Anemostat
 - c. Metalaire
2. Materials:
 - a. Aluminum air foil
 - b. Aluminum frame
 - c. Integral opposed blade damper, screwdriver operated from face
 - d. Sponge rubber gasket
 - e. Neck size and shape as noted on drawings
 - f. Finish grille and diffuser shall be fitted with Architectural drawings and General Contractor prior to order
 - g. Install as closely as possible to the locations shown on the Drawings.
 - h. Clean dirt, grease, fingerprints, etc. from grilles after installation.
 - i. Scratched, dented, bent or marred diffusers shall be repaired or replaced at the option of the Architect.

WALL LOUVERS

1. Wall louvers shall be heavy-gauge extruded-aluminum type with multiple breaks or ridges to prevent water from traveling up the blade. Blade depth shall be 4 in., unless shown otherwise on the drawings.
2. Blade shall slope at approximately 45 deg. and shall be reinforced on the outer and inner edges with a reinforced lip.
3. Louvers shall bear the AMCA Seal as having been rated in accordance with Standard 500 for air performance and moisture penetration.
4. Blade shall be factory-anodized aluminum color, unless specified otherwise. If specific color is required, a sample of the required color will be furnished.
5. Louver shall be designed for flange mounting against the face of the building.
6. Louvers shall be provided with an aluminum bird screen in a removable frame on the inside. Insect screen, if shown on the drawings for intake louvers, shall be aluminum in an aluminum frame and shall be mounted on the exterior of the louver.
7. For larger-size louvers, provide mullions to provide rigidity and allow expansion.
8. Install the louver in the masonry opening with the flange extending around the perimeter of the louver and 1/4 in. away from the wall to allow caulking. Secure the louver in such a way to prevent entry into the building.
9. Caulk the perimeter of the louver at the junction of the wall with silicone caulk, applied as recommended by the manufacturer. Allow room for expansion and contraction without damage to the caulking.
10. Louvers shall be equal to ruskin.

DISPOSABLE FILTERS

1. Provide 4" pleated filters for AH-1, AH-2
2. Provide 2" pleated for packaged heat pumps N/A
3. Provide 4" pleated filters for N/A.

CONTROL SYSTEM

PART 1 - GENERAL

DESCRIPTION

1. GENERAL
 - a. Furnish and install all electrical controls and components for all mechanical systems as listed below.
2. PACKAGE SYSTEMS N/A
 - a. Provide Heat - Cool - Off, Fan-On-Auto, thermostat, electronic, fully programmable with 4 functions per day, seven day/week programmable.

PART 3 - SEQUENCE OF OPERATION

A. SYSTEMS 1, 2.

1. A time clock (or ddc controller-add alt.) shall index the units from occupied to unoccupied operation.
2. Each system (AH & CU) shall be controlled by a programmable thermostat and a humidistat.
3. Each unit shall be controlled as follows:
 - a. In occupied mode the fan shall run continuously.
 - b. In unoccupied mode the fan shall cycle with demand for heating or cooling.
 - c. In occupied mode the outside air damper shall open to set point for proper outside air volume as called for on the drawings- in unoccupied mode, the outside air damper shall close to the minimum position called for on the drawings- in unoccupied mode, the outside air damper shall close to minimum position.
 - d. both modes occupied and unoccupied shall control cooling, heating and dehumidification as follows:
 - i. cooling mode- unit compressor shall cycle to maintain room temperature per thermostat set point.
 - ii. heating mode- unit compressor shall cycle to maintain set point. heat strips shall cycle on as 2nd or 3rd (or 3rd and 4th) stage heating.
 - e. dehumidification- upon humidistat sensing humidity above set point, the compressor shall cycle on and the room temperature shall be controlled by modulating the reheat coil to maintain space temperature. Room temperature shall be controlled by modulating the reheat coil to maintain space temperature.

FIRE STATS

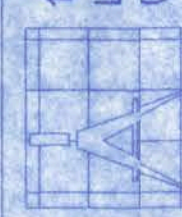
1. Provide fire stats on each unit as required by code.
2. Firestat shall shut down all unit components including fans, compressors, etc.

DUCT SMOKE DETECTOR

1. Contractor shall install duct smoke detectors to shut down all units with supply CFM in excess of 2000 CFM.

MECHANICAL SPECIFICATIONS

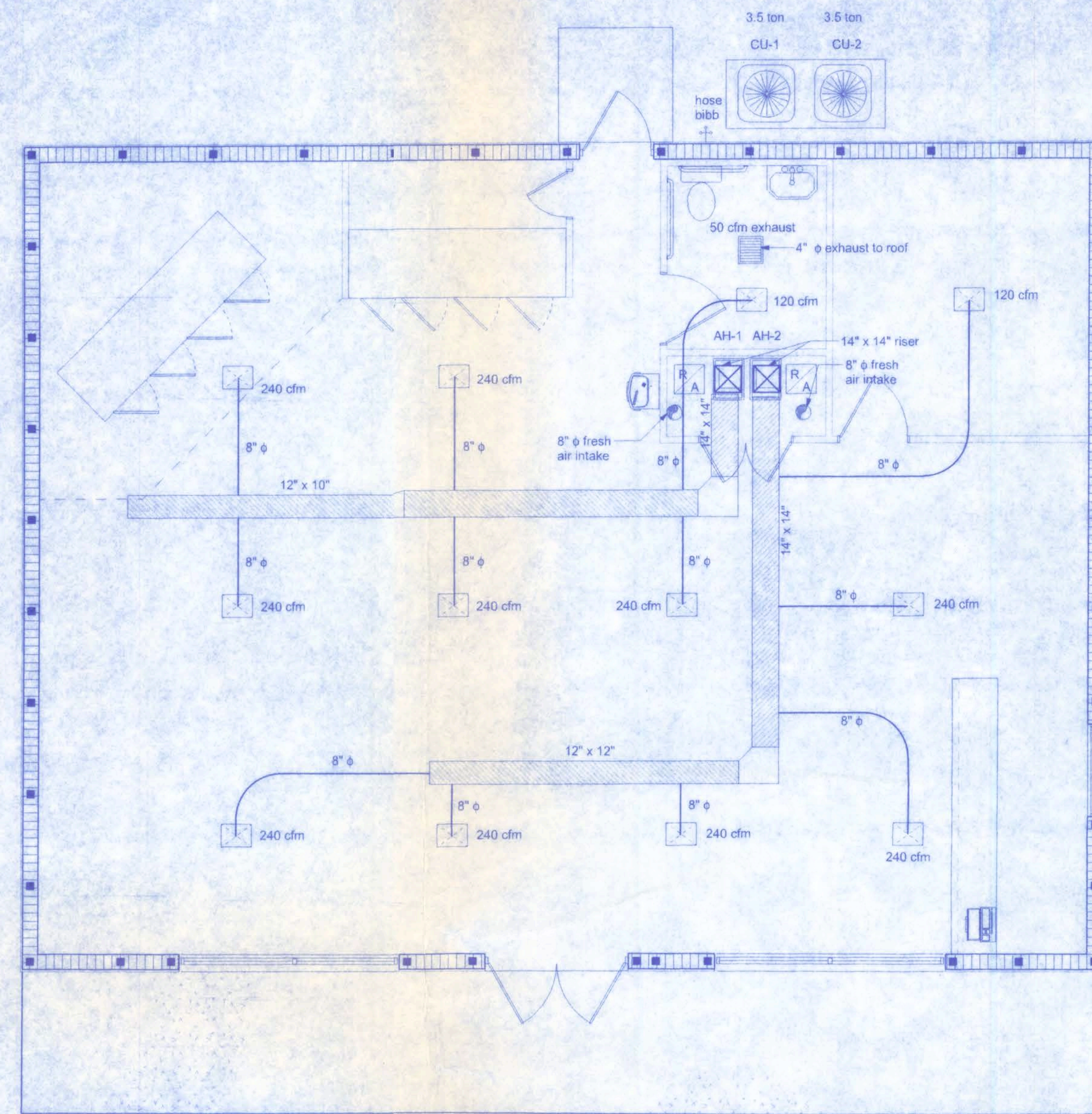
128 SW NASSAU STREET
LAKE CITY, FL 32025
(305) 426-4209



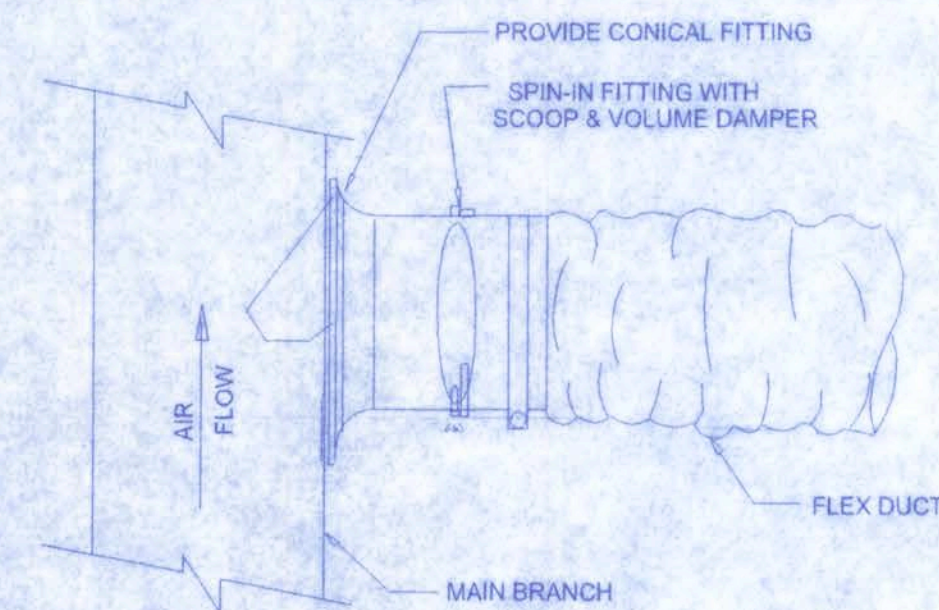
Freeman
Design Group Inc.

DATE	DRAWN BY
06/24/09	W.H.F.
	APPROVED
	W.H.F.
REVISIONS	
SHEET M-1	
OF 2	
PROJECT NO. 08C020	

CERTIFICATE OF AUTHORIZATION # 0008701



HVAC PLAN
SCALE: 1/4" = 1'-0"

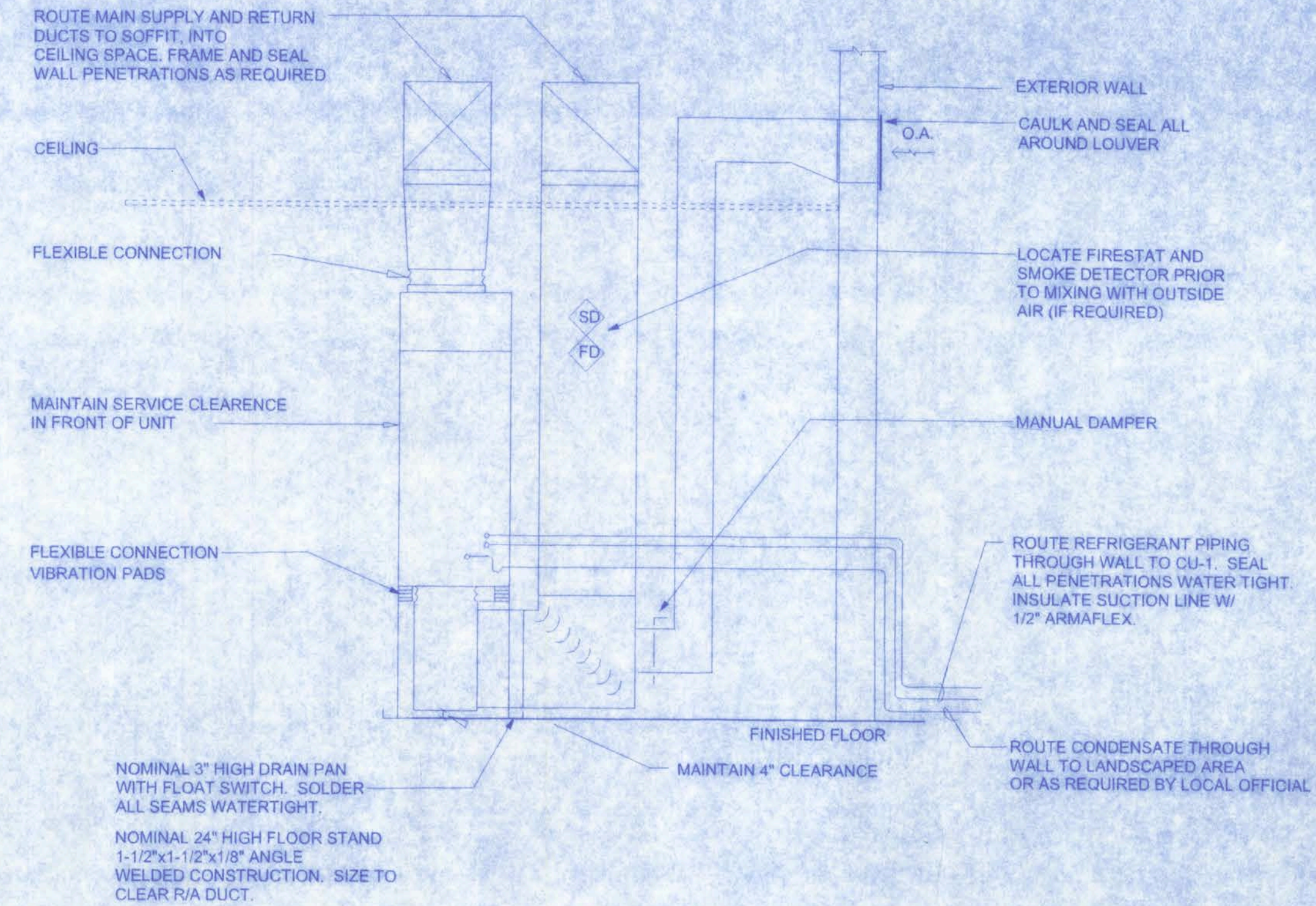


SPIN-IN COLLAR FITTING DETAIL
NOT TO SCALE

ANGLE IRON & FASTENER DIMENSIONS		
LENGTH	MIN. ANGLE SIZE	FASTENER LOCATION
0 - 48"	1-1/2" x 1-1/2" x 1/8"	8" ON CENTER
49 - 96"	2" x 2" x 1/8"	6" ON CENTER
OVER 96"	2-1/2" x 2-1/2" x 3/16"	6" ON CENTER

REQUIRED OUTDOOR VENTILATION AIR (NEW CONSTRUCTION ONLY) TABLES 403.3, FLORIDA MECHANICAL CODE, 2007 ED.		
BUILDING GROUP OCCUPANCY	OCCUPANT LOAD	OUTDOOR AIR (CFM)
Business Offices		0.30 cfm/sq. ft.
Retail Stores		
restroom		50 cfm per water closet or urinal
1,728 sf * 0.30 + 1 * 50 cfm = 568 cfm		
568 cfm outside air required		
284 cfm fresh air per system required		

SYSTEM 1 AND SYSTEM 2 EQUIPMENT SCHEDULE									
	mfgr.	Model No.	Volts	Phase	RLA	LRA	cooling capacity	heating capacity	cfm
AH-1	Carrier	KFCEH0401N05	208-230	1				15,700 btu	1,400
		5 kw Aux. heat							
CU-1	Carrier	25HBB3 42A30	208-230	1	19.9	109	40,500 btu		13



A.H.U. MOUNTING DETAIL
NOT TO SCALE

John H. Van
7.6.89
P.E. # 2000

PACKAGE SHACK

128 SW NASSAU STREET
LAKE CITY, FL 32005
(386) 758-4209

Freeman
Design Group Inc.

CERTIFICATE OF AUTHORIZATION # 00009701

DATE: 08/24/01
DRAWN BY: W.H.F.
APPROVED: W.H.F.

REVISIONS:

SHEET: M-2
OF: 2

PROJECT NO.: 18 C020